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Important Symptoms in the Common Ano-Rectal Diseases and Their Significance

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CHIEF OF PROCTOLOGICAL CLINIC, BETH ISRAEL HOSPITAL, NEW YORK; ASSOCIATE RECTAL SURGEON, JEWISH MEMORIAL HOSPITAL, NEW YORK; DEPUTY SURGEON, DISEASES OF THE RECTUM, O.P.D., NEW YORK HOSPITAL.

New York.

This paper endeavors to bring home some old truths worth repeating, but often forgotten or not utilized, learned in the field of everyday practice of proctology. One cannot repeat too often that which is of vital importance to the patient and at the same time leads to success for the physician.

The general practitioner should not take it amiss when the proctologist preaches in the interest of the physician as well as the patient for complete rectal examinations. The latter sees so many mistakes in diagnosis, or perhaps more correctly *omissions in diagnosis*, due often to incomplete examinations, that it is his duty to preach against this evil upon every occasion. It is utterly wrong to make a diagnosis or treat any rectal trouble upon the mere recital by a patient of his symptoms or by an inspection of the parts from a distance of a few feet.

A sad illustration of the laxity of some physicians in making complete rectal examinations or at least inserting a finger into the rectum is shown by the following case, seen recently by me.

Case:—Mrs. M. L., aged 39, pregnant for the third time, complained during her sixth month of pregnancy, to the physician whom she had engaged to deliver her, that she had a diarrhoea, with a discharge of mucous and blood. Without taking a history, or making any examination, he gave her some mixture and assured her that these symptoms were the result of her pregnancy and would disappear after she had given birth to her baby. She waited, but after her delivery the symptoms persisted. Having moved to another part of the city in the meantime, she consulted another physician, who also prescribed without making a rectal ex-

amination. She was then referred to me by a third physician. A family history revealed that her father died of carcinoma of the stomach, and her mother of a carcinoma of the uterus. Her previous history was negative up to the time of the onset of the diarrhoea. This history pointed to a serious condition, even though upon looking at her one saw a plump and not at all a sick woman. In fact, her color was good and no one without an examination would guess that she had an inoperable cancer of the rectum. This patient had a condition anyone could have felt. No special training was necessary to make a diagnosis, just a little care and thoroughness in the examination.

Another error that frequently occurs is where an obvious condition of minor importance is diagnosed and one that is more serious higher up is missed because of the failure to proctoscope every patient who has rectal symptoms. Because a patient has evident hemorrhoids and some bleeding does not mean that the bleeding comes from the hemorrhoids nor does their presence militate against his having a concomitant carcinoma. It hardly benefits the patient very much to have his hemorrhoids removed and to allow a cancer higher up to remain untreated, as shown by the following history.

Case:—M. V., male, 51 years old, gave a history of bleeding from the rectum, protrusions and pain with loss of weight. He had been operated on for hemorrhoids three months before his visit to me by a surgeon of fifteen years' experience in the treatment of rectal diseases. His reason for seeking another physician was that his pain, bleeding, and discharge of mucous had not been relieved by this operation or the subsequent treatment. Protoscopic examination revealed an inop-

erable carcinoma about six inches above the anal margin with deposits of carcinomatous tissue in the area of hemorrhoidal operation. This patient no doubt had hemorrhoids and the doctor in his haste did not look further. Both these patients could only receive the temporary benefits of colostomy and died within a few months thereafter. In marked contrast is the following case.

Case:—A.M., male, 55 years old, was referred to me for occasional bleeding and protrusions from the rectum. Upon taking a careful history we found that the patient had lost about fifteen pounds in the past six months; that he had become constipated and had some abdominal cramps. Upon inspection of the anal region we found prolapsing hemorrhoids which bled upon introducing a proctoscope. At the recto-sigmoidal junction, however, was a growth about the size of a small hazel-nut. The condition was explained to the relatives who did not take my opinion unconfirmed, but visited numerous other physicians, one of whom undertook to cure this man by medical treatment. Upon return to my office about four months later he had an inoperable carcinoma. This was a case at the outset favorable for radical operation. He had lost his chance by falling into the hands of a medical quack.

One cannot account for this laxity once the patient has presented himself or herself to the physician. They have overcome any natural reluctance to have this part of the body examined and it is not for the physician to be supersensitive with respect to examination of this region. If that should be the reason for omitting a rectal examination, then he should choose a branch of medicine agreeable to his tastes.

No one should endeavor to make a diagnosis by merely eliciting the symptoms from which a patient complains. That very frequently is exactly what occurs when a patient with rectal trouble presents himself to the general practitioner for relief. Frequently the patient also enacts the role of physician and comes with a ready-made diagnosis of his complaint, merely asking the doctor to prescribe an appropriate cure. Some physicians then feel that they have fulfilled their duty when they have agreed with their patient and perhaps have inspected the anal region and prescribed for the snap diagnosis thus made. This often leads to humiliating experiences for the physician because he himself discovers a serious trouble too late, or worse, the patient goes to another physician and is then enlightened.

The statements of a patient are of great value but the question of diagnosis should not be based on them alone or left to him. If one were to venture a guess as to the number of correct diagnosis one can make upon symptoms and history alone, I would say that 25 per cent would be too great a figure. The same symptoms characterize diseases of entirely different pathology and prognosis. The same pathological condition will not be characterized in different individuals by similar symptoms. Often symptoms pointing to a fissure will prove to be a carcinoma and vice versa. Protrusions with bleeding, which the patient nearly always diagnoses as piles, may be one of many conditions—either an anal polyp, internal hemorrhoids, prolapse of the rectum, specific condylomata or carcinoma. Never be influenced too highly by the description a patient gives of his symptoms towards any particular disease. The symptoms may often be insignificant but the underlying condition very grave.

The symptoms of ano-rectal diseases to which I wish to call your attention are the following: Pain, Bleeding, Discharge of Pus, Mucous or Muco-Pus, Protrusions, Itching, Constipation, and Diarrhoea. These are

the principal symptoms common to most ano-rectal diseases, one or more of which bothers the patient and brings him or her to the office of the physician.

PAIN—This symptom brings the sufferer to the doctor sooner than any other. In order to obtain any information as to its probable cause we have to ascertain all the possible facts in connection with it. Whether it is acute or chronic, sharp or dull, constant or intermittent; whether it has any relation to the act of defecation; whether it came on suddenly after a severe strain either at work or at school; whether it is located low down or high up in the rectum; and lastly if it be localized or general. Each of these inquiries brings an answer that is significant if interpreted correctly.

As a general proposition pathology in the lower part of the anal canal is characterized by severe pain because the anal canal is richly supplied with sensory nerves and reacts quickly and sharply to any changes that occur there. All inflammatory diseases located on the perineum about the anal margin are for the same reason also very painful. Pathology located higher up, however, in the rectum or sigmoid, in the early stages of the disease, gives rise to an indefinite sense of uneasiness in the parts, a dull ache, a bearing-down sensation in the pelvis, a knowledge that one has such an organ as the rectum and only later when we find ulceration and infection do the patients complain of pain.

Both internal and external hemorrhoids are only painful when inflamed or ulcerated, otherwise they may be present for years and give rise to only some discomfort in the rectum. I never operate on hemorrhoids merely because I find them present on examination. Only when they are a source of much pain or bleeding do I think it necessary to use operative measures. You all know of cases that have gone on for years without the patient being any the worse for their presence. It is not to the credit of the physician to advise immediate operation in such cases and have the patient refuse to accept the advice and then live in comfort for many years.

Thrombotic hemorrhoids are nearly always very painful at the outset but very often subside without operation. In their case, however, the surgical procedure is such a simple one, merely incising the skin and turning out the clot, that the patient is always grateful for the immediate relief he obtains.

Never attempt to replace inflamed external hemorrhoids or thrombotic hemorrhoids. They don't belong inside the rectum and such attempts only increase the pain.

Pain coming on during a bowel movement and lasting several hours thereafter is usually due to a fissure. Do not forget to think of lues when you find multiple fissures of the anal canal. Fissures in a luetic patient are chronic and usually give rise to very little pain. This kind of fissure, in fact, puts you on the track of the correct diagnosis.

Pain is not a significant early sign of cancer of the rectum and is only present later when ulceration of the mucous membrane takes place. When the cancer is low down involving the anal canal we find pain early. Here I may state that x-ray pictures do not give much information in making a diagnosis in early cancer and often are misleading, giving the unwary a false sense of security. It is only to confirm a clinical diagnosis that they are valuable. We should be very careful in making a definite diagnosis from x-ray photographs alone. They are however very useful in showing us the situation of strictures and large growths. The best instrument we have for the early diagnosis of this disease is our trained finger. It gives us more information than a proctoscope or x-ray picture.

Blind internal fistula and inflammation of the crypts of Morgagni, which really act as blind internal fistula, give rise to severe constant pain, in contradistinction to the intermittent pain of fissure. Here also the finger makes the diagnosis, as the patient will inform you as you press on the inflamed spot.

Of course an abscess about the anal margin, or in the walls of the anal canal, or a foreign body in this situation such as a fish or chicken bone gives rise to a sharp constant pain and in both cases it is important to make an early diagnosis to possibly avoid a complicating fistula.

Just as rectal lesions can give reflex pain in all the neighboring organs, as the genito-urinary, so can lesions in the genito-urinary organs give reflex pain in the rectum. Thus the symptom may be very misleading and point to an organ which is entirely innocent and not the site of disease. Fissures are especially guilty of giving all sorts of reflex symptoms, such as retention of urine, frequent urination, strangury, etc. Women will often be treated for uterine and adnexal disease when the trouble is located in the rectum or anal canal. It is so important that the physician remember that he is treating a patient and not a specialty. He must canvass all the possibilities that a given symptom may mean and whether the pathology he discovers in his own special domain is really the sole cause for the patient's trouble.

HEMORRHAGE:—Next to pain this is a symptom most frequently complained of by the rectal patients. As in pain here also we should elicit all the facts possible; whether the bleeding is bright red or dark; large or small in amount; the relation to defecation; whether it occurs during stool or before or only during the intervals; whether often and for how long a period, or only occasionally. It is one of the symptoms which requires a complete and careful examination of the anus, rectum and sigmoid. We should not give up our search for the source of bleeding until we have satisfied ourselves that we have located the true cause, nor should we forget that rough or unskilled instrumentation will itself often cause bleeding.

Bleeding occurs more often in adults than in children. This can easily be explained. Adults have hemorrhoids and children very rarely; and bleeding is the most common symptom of hemorrhoids. When children have bleeding it is almost always due to a single polyp situated in the anal canal.

Bright red blood is usually fresh blood and comes from a point low down in the colon, rectum or anal canal. Dark blood or blood mixed with stool comes from a source higher up in the digestive tract, in fact, may be blood which has been swallowed. The darker the color, the higher up will you find the lesion causing it.

Is bleeding an early or late sign of cancer of the rectum? This sign depends of course upon ulceration of the mucous membrane covering the tumor and ulceration may take place early or late, therefore every bleeding whether slight or profuse calls for a rectal examination. As the commonest part of the rectum involved by cancer is only two to four inches from the anal margin, the finger is the best instrument. In addition to noting a growth you will find on its withdrawal that it is often covered with blood and a peculiarly offensive odor will be noticed.

Bleeding from internal hemorrhoids or a polyp takes place during or immediately after defecation and is bright red, not as a rule accompanied by pain and is most often profuse.

Fissure will most often give a moderate amount of bleeding at stool, more often only a drop or two, and

almost always accompanied by pain or severe burning.

In general terms we may state that all severe inflammations, ulcerations and diseases of the rectum are accompanied by bleeding in addition to the discharge of pus and mucus.

The appearance of the patient is an index to the amount of blood he has lost; severe anaemia often being the result of slight bleeding over a long period of time.

PUS:—When discharged alone it usually means that an abscess has ruptured into the bowel, or that a fistulous tract exists with an internal opening, but most often it is mixed with mucous and blood. It should always be regarded as a serious symptom. In severe ulceration of the bowel there is often such a profuse discharge of pus and mucus that the patient is compelled to literally live on the bed-pan. I recall the case of a young man, 28 years of age, who had lost 60 pounds, having come down from 158 pounds before the onset of his illness, to 98 pounds at the time I saw him; he was on the bed-pan during the whole 24 hours of the day. He had been discharged from one of the largest hospitals in the city to die at home. I may say that he is alive today, six years from the time I saw him first, weighing 140 pounds, working at his trade of tailor and having been able to increase his family with a son.

MUCOUS:—Excessive excretion of mucous is an evidence of irritation of the mucous membrane of the rectum and colon, due to chronic inflammation, cancer, polypus, invagination, large internal hemorrhoids, thread worms, fecal impaction, etc.

Mucous tinged with blood should always put you on your guard for the presence of cancer.

The disease known as membranous colitis is only a form of chronic hypertrophic colitis in which the mucous instead of being expelled in the usual form, becomes hardened on the surface of the mucous membrane. It is nearly always found in connection with mechanical causes of colitis, such as enteroptosis, movable kidney, bands, etc., which result in continuous pressure upon the colon. The form in which the mucous happens to be expelled has no other significance. Mucopus always indicates an ulcerating surface, and is found in all forms of ulcerating colo-proctitis, stricture, carcinoma, etc.

PROTRUSIONS:—This symptom does not always signify internal piles; there are other conditions which give protrusions, such as prolapse, polyi, hypertrophied anal papillae, sentinel pile, specific condylomata, cancer, etc. The important facts to be ascertained about this symptom are: its relation to defecation; whether it recedes spontaneously or has to be replaced manually; whether it is accompanied by pain or not.

ITCHING:—Of all the symptoms I have enumerated this is the most annoying to the patient and oft times the most baffling to the physician to cure. It is one that taxes the skill of the most experienced proctologist.

Every pathological lesion that occurs in the anal canal may be the source of irritation that produces this symptom and it is estimated that 90 per cent of all the causes for itching about the rectum are located right there. The reason for this I have stated before, that the mucous membrane lining the anal canal is richly supplied with sensory nerves and these nerves are some of the most sensitive in the body.

It is not sufficient to translate this symptom into its Latin equivalent of "Pruritus Ani" and send the patient home with a lotion or salve. It requires a painstaking, complete, and careful physical and proctological examination. The 10 per cent of cases whose etiology is not found in the anal canal will often require the assistance

(Concluded on page 192)

Endocrine Basis for Ear Affections*

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It is chiefly the general constitutional effects of endocrine dysfunction that are studied, while not so much attention is given the concomitant effects on the special organs. Schatz asks, "is it possible that the suppression, for example, of the secretion of the thyroid gland can produce such profound effects on the organism as evidenced by the cases of myxedema and cretinism, and yet spare the organs in which otologists are especially interested?" Assuredly not.

Deafness is spoken of as one of the congenital manifestations of endemic goitre in goitrogenous districts, and it is attributed to developmental defects due to congenital inefficiency of the thyroid mechanism.

With regard to cretinic degeneration to the acoustic organs, Nelson W. Janney quotes Falta who declares: "The statements as to the functional disturbances or the pathologico-anatomical findings in the deaf cretins and in the endemic deaf-mutes diverge greatly. Hammerschlag, whom we have to thank for the first exact investigations, found on the one hand alterations in the peripheral hearing apparatus, and on the other only disturbance of the perception of sound. Further, there was found in endemic cretinism incomplete ossification of the stapes, inhibition of development of the epithelial cells in the ductus cochlearis, shortening of the base of the skull and thereby disturbance in the development of the organ of hearing incomplete ossification of the organ of hearing with hyperostatic growths at other places. Anomalies of the malleus, myxedematous thickening of the tympanic mucous membrane, have been regarded as the cause of hardness-of-hearing. Recently F. Bircher has strenuously criticized a portion of these findings or their significance. To-day we may safely assume that we may ascribe great importance to the degeneration of the cortical centers or the developmental inhibitions in the cortical centers, and that the different alterations are directly elicited by the goiter noxus and are co-ordinated with an insufficiency of the thyroid, which finally sets in."

Myxedematous cretins are commonly deaf-mutes or defective in hearing. McCarrison attributes the condition in part to the infiltrative state of the tongue, aural mucosa, eustachian tube and nasopharynx, but mainly to imperfect development as well as infiltration in the higher brain centers, and to a lack of receptivity of the nerves.

Disturbances in hearing resulting from swelling of the eustachian tubes are rapidly improved by thyroid feeding in sporadic cretinism, but not in endemic. The auricles in myxedema are enlarged, the auditory meatus narrowed by its thickened walls, causing more or less deafness, vertigo and tinnitus.

Callison formulates the term "progressive systemic deafness" as a pluriglandular dyscrasia with associated symptoms and signs in practically every tissue of the body, and includes therein the three types of progressive deafness with tinnitus, chronic catarrhal otitis media, otosclerosis, and nerve deafness. The thyroid and interstitial cells of the sexual organs are

usually responsible, but the adrenals or pituitary may also be in others.

The connection between the endocrine glands and the organ of hearing is just as evident and important as the links between other organs of the body which have become better known as our knowledge of the hormones has increased.

Amongst conditions in the ear which may be due to thyroid deficiency, Callison mentions infiltration and thickening of the tympanic membrane, the middle ear and Eustachian tube, with tinnitus aurium and deafness. He thinks that on theoretical considerations it would seem probable that otosclerosis is the result of thyroid dysfunction. Leading in these theoretical considerations is the fact that these organs control calcium and phosphorus metabolism, while otosclerosis seems to have as a basis a disturbance in the metabolism of these minerals.

As to the etiology of otosclerosis various theories have been advanced. Drury suggests that the endocrine glands as possible causative factors offer a field of study of definite possibility.

In the first place, certain of the endocrine glands seem to have some influence over the calcium metabolism which may be causative or resultant. Further, they are recognized as very definitely concerned in general metabolism as regulators if not centers of control.

In otosclerosis there exists the possibility that the absorption of any portion of the margin of the oval window might interfere with the nutrient supply of that part of the annular ligament of the stapes, contiguous to it.

This might engender an absorption of the ligament itself with a gradual replacement by porous bony elements which in time could become more compact in structure.

The writer called attention in a previous paper in this series to the marked improvement in a case of scleroderma following transplantation of gonadal tissue. He also called attention to the absorption of rheumatic nodes and other instances of evidence of stimulation of the absorptive powers of the body following gland transplantation. It is quite understandable that fibrotic conditions in any part of the body may benefit by anything that establishes endocrine balance.

In a paper published in this series in describing the technic of gland transplantation operation the writer has called attention to the necessity of transplanting glandular tissue regardless of the kind of a gland transplanted at a distance from the line of incision, because each form of glandular tissue contains some secretion similar to trypsin, which should it come in contact with the wound would prevent healing due to the absorptive character of this said secretion.

As early as 1902 Frederick mentioned glandular dysfunction as an etiologic factor, giving the thyroid the preference. The reason for this selection was that the observer dealt principally with trophic and toxic disturbances.

Axhausen (quoted by Drury), while believing that changes in the internal glandular secretions, espe-

* This is the ninth article of this series.

cially the thyroid, determined the dystrophic processes of bone, found in many cases, that the changes in other parts of the body were more marked than in the ears.

Drury presents the results of a clinical and laboratory study covering a period of eighteen months, designed to ascertain if there be any endocrine influence demonstrable in otosclerosis.

While no case showed all the points rated above, each one demonstrated a sufficient number of these symptoms to leave no doubt as to the diagnosis.

A large number of vital function tests from various sources were studied originally with normal human subjects, and their dependability and significance evaluated. These studies established a basis for the performance of those tests found to be significant and reliable. A group of cases in whom existed demonstrable endocrine defect, limited to a single focus, were next subjected to the same methods of study. In this way both the sense and amount of deviation from the base line caused by aberrant function could be determined. Finally, individuals of unrecognized etiology were selected, a diagnosis established by the conformity of their tests to one or another of the conditions previously studied, the indicated specific glandular medication administered, and ultimately the effect of this latter determined by a repetition of both clinical and laboratory studies.

The coincidence thus obtained offers ample support for the validity of the general concept and the procedure based upon it.

Conclusions were by this authority that where such extraneous factors as drawn fever, starvation, the leukemias, and acidosis, can be eliminated, the ductless glands in largest measure determines the level of the basal metabolic rate. Thyroid influence being dominate and that of the gonad, the pituitary, and possibly the adrenals is inferential rather than established. The sense of change is uniform. The differences are those of degree. The alveolar carbon dioxide factor is influenced by certain endocrine conditions. By many observations the fact has been established that in ovarian failure and in pregnancy there exists a level of alveolar carbon dioxide indicative of severe acidosis without any clinical evidence of the same.

Uric acid shows high values in certain types of pituitary conditions, without complementary change of other constituents. Many thyroid cases, particularly those of the myxedematous type, give a blood chemistry picture highly suggestive of an incipient nephritis which normalizes under medication. Further, many endocrine bloods are lymphoid in character. With many pituitary cases a low-grade eosinophilia is observed. The sugar selected is galactose, and the metabolism of this sugar is affected by the functional level of the thyroid, pituitary and ovaries in such a wise as to constitute an important differential test.

The writer disagrees with the above interpretation. He has called attention in the first articles of this series of the *compensation of the thyroid gland to the gonads*. It is true that the thyroid enlarges during pregnancy, during puberty, and other periods of life, when the gonads are called upon to supply more endocrine secretions than they are probably capable of doing. At such a time the thyroid enlarges and it is the writer's opinion that this enlargement represents the effort on the part of the thyroid gland to compensate and supply endocrines which the gonads are not capable of doing. It is the writer's opinion that the thyroid is not primarily

responsible for the level of the basal metabolic rate.

The writer's contention would seem to be borne out by the following cases:—*Case No. 1* H. F. M. patient applied for the transplantation of testicular tissue on account of marked impotence extending over a period of years. His physical examination showed vital organs normal, penis normal, testicles only partially developed (about the size of olives) marked deafness which began at the age of thirty. Impotence developed at the same age and patient found that he was unable to copulate more than once a month and then only partially successful. Examination showed the eustachian tubes normal, drum membrane slightly thickened and retracted, hearing five-twentieths. Transplantation operation performed July 17th, 1923. No result September 30th, 1923. Further transplantation was done November 18th, 1924. Patient reported that potency had returned and that in this respect he was as normal as he was at twenty years of age, hearing had markedly improved, drum membrane showed less retraction and sound test had increased to about fifteen-twentieths in each ear.

Drury concludes first, all non-endocrine influences must be sedulously excluded by additional dependable observations. Second, no one test alone can be regarded as containing an independent diagnostic entity. Only the conjoint findings of the entire series of tests (including special neuro-otological, X-ray and physical examinations) with their mutual inter-relationships warrant the establishment of a diagnosis, and this is always to be regarded as tentative until verified by medication and subsequent repetition of clinical and laboratory observations.

Drury maintains that in over fifty percent of cases of progressive systemic deafness there is distinct endocrine dysfunction. Patients visit an aurist complaining of deafness and head noises. There seems to be no constant relationship between these two symptoms. The tinnitus may be almost unbearable with little change of the range of hearing in either ear. Again, the deafness may be marked but hardly any tinnitus complained of.

On examining the ears, one may find various signs, inconstant perhaps, except for a lessening of cerumen in the external canal. As the case may be complicated with middle ear changes the drum membrane may be thickened and retracted. It may be quite normal in appearance and the patient still complain of extreme deafness. The potency of the eustachian tube varies, as on catheterization, it may seem to be open and the drum show retraction.

In the hypo-thyroid cases the eustachian tube seems much swollen, as is the membrane in the nasopharynx. The functional tests of hearing therefore, are the most important aids for a correct diagnosis.

In Drury's endocrine cases, failing of memory was frequently noted. The patients seemed dull and concentration was an effort. The disposition in several was quite irritable, and there was a definite restlessness. They were nervous and introspective. Occasionally, in testing the ears, the response was slow and indefinite.

Several of the cases stated that their deafness was pronounced after a severe illness, such as typhoid and influenza. This was probably toxemia. But it was also noted that the crises of life, as well as worry and shock took their toll as causation factors.

It seems probable that the ductless glands are an important factor among several in the cause of the disease. In correcting the endocrine aberration,

marked improvement was observed in the specific ear condition.

How are we to recognize cases of hypo-thyroidism? Schatz says the keynote to the pathology as well as to the symptomatology is "infiltration". Hence, the large flabby tongue; hard elastic inferior turbinates; thickening of the laryngeal and bronchial submucosae, hypertrophy of the tonsils and adenoids; thickening of the lining membranes of the tympanum, middle ear, and eustachian tubes.

Sajoffus suggests, that there may be some connection between otosclerosis and the thyroparathyroid mechanism, through their control of calcium metabolism. He regards the thyroparathyroid mechanism as the opsonin of the body, and also as controlling the coagulability of the blood.

As to treatment, McCarrison lays stress on intestinal focal infection and urges that all approved methods be applied to eradicate it and then to give thyroid extract in doses of grains one-half to one at bedtime in adults, or in divided doses through the day; while in children grains one-quarter at bedtime or grains one-eighth twice daily may be given. His method is to give the smallest effective dose, rarely more than grains V daily, and to reduce the dose in hot weather, and in the old, or during menstruation.

Exertion must be avoided during thyroid medication, because there is danger of heart failure.

Callison recommends removal of foci of infection supplemented by early treatment with endocrines. He uses an "adrenospermin" compound in the so-called "thyroid type" of patients. If both thyroid and pituitary symptoms occur, he begins with mixed gland substances. He considers the blood pressure as the key to the medication. For low blood pressure he adds adrenal gland; for high blood pressure thyroid and sex gland, increasing the sex gland as the blood pressure rises. Because of the prolonged treatment necessary, he advises small doses, e. g., one-eighth grain thyroid, or even less at the beginning, interrupting the medication for eight to ten days, or more, each month, particularly in the female during menstruation.

In the cretin Sajous advises, in addition to the thyroid treatment, syrup calcii lactophosphate, and also thymus gland.

According to Sajous, if any deep-seated aural trouble is not cured by local measures, we should resort to thyroid extract. But endocrine medication is contra-indicated in acute febrile conditions associated with destructive inflammation in the tympanum, because they increase proteolytic action. Thyroid must also be avoided in weak heart. When the blood pressure is low, give hypophysis sicca, grains one-tenth.

In acute suppurative otitis media due to causes other than the acute febrile infections, thyroid or adrenal deficiency may exist. Local heat—our valuable aid in acute otitis media and mastoiditis—is active by hastening the local germicidal action of the endocrines.

Indolence in healing in both acute and chronic otitis media or mastoid affections is an indication for the administration of thyroid gland, with hypophysis sicca or suprarenal gland as aids to local medication. Calcium lactate (grains V, t. i. d.) enhances endocrine action in these cases.

Schatz reports that tinnitus, due to chronic catarrhal otitis media, associated with a thick, bulky tongue, in a podgy individual, was relieved by thyroid extract after less than two weeks' treatment, whereas the usual treatment with inflation for six

months failed to give relief. Tinnitus due to nerve conditions was not improved by thyroid.

One patient who for twelve years was suffering from pains in the mastoid region, associated with a chronic discharging sinus from a depressed unhealed mastoidectomy wound, was promptly relieved of her pains, and the discharge ceased after one week's thyroid medication.

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Physiotherapy

Physiotherapy has one thing in common with all other therapeutic procedures when it is indicated; its efficiency is very greatly enhanced by its early use.

In order to put physiotherapy on a real scientific basis with the medical profession, the American Medical Association has a Council of Physiotherapy. This council is endeavoring to point out to the medical profession the advantages and disadvantages of physiotherapy, so that its abuses may be reduced to a minimum and its scientific possibilities may be appreciated.

There is, of course, some prejudice against physiotherapy on the part of some members of the medical profession. In many cases this prejudice is due to lack of tact, which is one of the most important qualifications of a physiotherapist.

The three essential qualifications for a successful application of physiotherapy are tact, technical skill and professional knowledge. When the physiotherapists have exercised these three qualifications the medical profession should be open-minded and fair and unprejudiced in arriving at a conclusion in regard to the value of physiotherapy.

Physiotherapy had its great impetus during the period just after the World War when the physiotherapy service became the human salvage branch of medical relief. Physiotherapy often put a case operated upon out of the failure column into one marked "success."

The Army, the Navy and the Public Health Service all developed departments of physiotherapy in their various hospitals, and the work done by trained physiotherapy aides converted thousands of doctors from disbelievers in physiotherapy to ardent supporters of this form of medical service.

Method of Protecting Wrist, Hand or Fingers During Operation

The method advocated by D. C. Patterson, Bridgeport, Conn. (*Journal A. M. A.*, June 4, 1927), consists in putting ordinary sterilized, surgeon's rubber gloves on the hand to be operated on. Before the gloves are applied, the field of the operation is, of course, prepared as usual. When incision is to be made on the hand or a finger, the line of incision is exposed by cutting a slit in the glove. The margin of this slit can be fixed at the edge of the skin wound by small skinclips, thus minimizing the danger of skin contamination.

Radiation Therapy in Tumors of The Bladder

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In 1923, the U. S. Census Bureau reported that cancer of the bladder caused three per cent of all deaths due to cancer. On this basis, the number of deaths from cancer of the bladder would be more than three thousand. There has been a progressive increase in the death rate, from malignancy of the bladder. This does not necessarily mean that the disease is more prevalent, but is chiefly due to improved methods of diagnosis, resulting from the development of cystoscopy.

Inflammation of the bladder, from various causes, often precedes tumor formation, just as it frequently does in the breast and other parts. In aniline workers, cancer of the bladder is quite common. Infection with various parasites, and the presence of calculi are contributing causes in many cases. Secondary involvement of the bladder is not infrequent in malignant disease of the kidney, prostate and uterus and other pelvic organs.

The most common primary tumors of the bladder are papillomata, papillary carcinomata and infiltrating carcinomata. While many papillomata appear to be benign, in that they may be apparently destroyed by various surgical measures, yet many of these cases develop frankly malignant tumors later. In some cases, the recurrence may not appear for several years. A large percentage of tumors originate in the lower half of the bladder, and the posterior wall is more commonly involved than is the anterior wall. Malignant disease of the bladder usually does not extend beyond the organ, until late in the disease, so that early treatment should give very satisfactory results. Its usual mode of extension is to the posterior lymphatics or through the ureter.

The most common early symptom is haematuria, followed by frequency or dysuria. Pain is not a prominent symptom unless ulceration is present. Loss of weight occurs late in the disease. Anaemia may be present if the bleeding is excessive. The diagnosis by cystoscopic examination is so perfected, that the attending physician is never justified in denying his patient this aid, in those beyond middle age who show haematuria, or other symptoms pointing to the urinary tract. Confirmation of the presence of a tumor can usually be obtained by the air cystogram. This is done by catheterizing the bladder and after it is empty enough air is injected to distend the organ. An x-ray film made at this time will generally show the size and location of the tumor.

While the diagnosis and surgical treatment in these cases is the field of the urologist—Dr. R. B. Anderson—we have indicated the important symptoms, because we feel that early diagnosis—and this is true for all cancers—offers the greatest opportunity for more favorable results. Inasmuch as the physical properties and therapeutic effects of radiation is the particular field of the radiotherapist, we will comment on radium as well as x-ray therapy in this report.

Because of the necessity of preserving the reservoir function of the bladder, radical surgery on this organ is contraindicated. There are some tumors of the bladder so limited in extent, and so favorably situated that complete surgical removal is possible. In these cases, post-

operative radiation with high voltage x-rays is indicated, as a prophylactic against recurrence. We say high voltage, because it is not possible, with voltage below 200 K.V., to deliver enough radiation to destroy tumor cells in the bladder.

Most of those suffering from tumor of the bladder, when first seen by the urologist, are not suitable for resection. For these cases, the only hope of relief is through radiation. If the tumor is not too extensive, and is favorably situated, radium followed by x-ray therapy is indicated. Radium may be applied through a cystoscope or by direct vision through a suprapubic cystotomy. The latter method, under sacral anesthesia, is used at our institution because it permits a more complete survey of the bladder and also a more accurate method of applying radium. Radium is used in the form of emanation in glass or gold seeds for permanent implantation of the tumor, or as salts of radium in needle form for temporary application. We believe that implantation of seeds whether filtered or unfiltered is a dangerous procedure, in a hollow thin-walled organ such as the bladder. There is danger of perforation and severe reactions; and furthermore these seeds being foreign bodies, may later excite stone formation. Most cases have been treated with needles containing radium salts, the individual needles representing five to twelve and one-half mg. of radium element. These needles are buried in the tumor parallel to the wall of the bladder and one and a half to two centimeters apart. Inasmuch as the radium occupies the middle two-thirds of the needle, some are placed at right angle to the others to get uniform radiation of the tumor. If the tumor is pedunculated, the major portion is removed by snare and treatment applied to the stump. Cautery or electrothermic methods are contraindicated when radium is to be used, because of the impossibility of controlling the reaction. The needles are left in for varying periods up to six hours, dependent on the conditions. Four to six weeks, or later, depending on the reaction,—determined by cystoscopic examination,—x-ray treatment is begun.

High voltage therapy (200 K.V.) only is used. Treatment is given through four areas, two anteriorly and two posteriorly, with the patient lying on an oblique plane, to prevent overlapping of treatment to healthy tissues. We aim to give one hundred and twenty per cent of an erythema dose to the tumor area. Each series extends over a period of two to three weeks, in order to protect the patient from reaction from the radiation. Another series is begun two months after the completion of the first. Further treatment is given after longer intervals until four are completed. The treatment is discontinued then, unless the urologist finds evidence of disease still present. The patient continues to report periodically to the urologist for examination. This constitutes the routine treatment of bladder tumors which from their size and position make it possible to treat the entire tumor area with radium; and these are the cases which offer the greatest chance for successful eradication of the disease.

Where there are multiple tumors present—usually papillomata—the individual tumors are treated by ful-

guration or other destructive methods. When there is no longer any evidence of reaction from this treatment, high voltage *x*-ray treatment is given, in a manner similar to that used in cases previously treated with radium. The intention of this treatment is to prevent recurrence.

Many of the cases, when first seen, were too extensive for the use of radium. In these cases, a large part of the bladder is generally involved, and continuous drainage through the suprapubic wound is often necessary, because of the limited capacity of the organ. Cystitis is generally present and often there is infection of one or both kidneys. In some of these cases, we have used filtered radium in the bladder, burying the radium capsule in a sea sponge, which, on expansion, tends to keep the capsule centrally placed in the bladder. This treatment is later supplemented by high voltage *x*-ray treatment.

While we have indicated, in a general way, the routine radiation in different types of tumors of the bladder, we would emphasize the fact that there is no such routine treatment applicable to all bladder tumors. The treatment in each case is determined through the cooperation of the departments of urology and radiotherapy after complete study of the patient.

Up to January first, 1927, twenty-seven patients received radiation for primary tumors of the bladder at St. Mary's Hospital. The youngest patient was thirty-three and the eldest seventy-five. The largest group by decades were between fifty and sixty years of age. In discussing the results of any treatment for malignant disease, the word cure is rarely used at the present time. This is quite right, because metastases sometimes appear as late as twenty years after the removal of the primary growth. Of the twenty-seven cases, there are eight patients who are now free from symptoms, and show, on cystoscopic examination, no evidence of disease, for periods varying from one to three and one-half years. Fifteen of these cases had lesions sufficiently localized to permit treatment of the tumor area by radium followed by *x*-ray. Seven of this group are now (June, 1927) free from symptoms, and there is no visible evidence of tumor. Twelve of the cases were so advanced that only *x*-ray treatment could be used. Of this latter group, one case has been free from symptoms, and shows no evidence of tumor two years after treatment. A number of these cases were so advanced that only a single series of *x*-ray treatments were given. Some others removed to other states and discontinued treatment after the first series. We had one case of secondary carcinoma of the bladder in which *x*-ray treatment alone was so successful that a brief digest of the case is warranted. E. S., age fifty-five, was admitted to St. Mary's Hospital October 22nd, 1923. In April, 1923, a suprapubic operation was done at Mount Sinai Hospital, New York. The pathological diagnosis was carcinoma of the prostate. When he entered St. Mary's he had an intra-abdominal tumor the size of a grapefruit, just above the pubes under the scar of the previous operation. He had lost fifty pounds and had increased frequency with marked haematuria. X-ray films showed erosion of both pubic bones, involving about two inches on either side of the symphysis. Haemoglobin was 40 per cent. Because of generally poor condition, cystoscopic examination was not attempted. The diagnosis was secondary carcinoma of the bladder following carcinoma of the prostate. The erosion of the pubic bones may have been due to direct extension of the disease, or absorption from pressure of the tumor. High voltage *x*-ray treatments were at once begun. Five series in all were given, the last series being given in December, 1924. By this time the patient

was back to normal weight, haematuria had disappeared and the tumor was reduced to the size of a lemon. There was complete regeneration of the pubic bones with some thickening of the periosteum at the site of previous erosions. This patient is still living and free from symptoms and reports every three months for observation. Prior to coming to St. Mary's, he had been a patient at Memorial Hospital for a short time, where his case was diagnosed as carcinoma of the bladder secondary to prostatic cancer. While there he received a small amount of *x*-ray treatment, leaving there before a single series was completed.

While the number of cases here reported is not large, and the time elapsed is not sufficiently long to determine the ultimate result, nevertheless we feel that we have demonstrated that it is possible, by radiation therapy, to add several years of comfortable existence to a considerable percentage of patients suffering from malignant disease of the bladder, not amenable to any other form of treatment.

We believe that radium and *x*-rays combined as we have indicated offer a better chance for relief than radium alone. In a hollow organ like the bladder, one must be cautious in applying radium and repeated treatments with this agent are not possible as they are in other tissues. Subsequent treatment, with high voltage *x*-rays, make it possible to destroy or inhibit the growth of tumor cells, which may have survived treatment with radium.

Early diagnosis will increase the number of patients who will obtain relief through improved methods of treatment. Many of the cases, covered by this report, did not enter the hospital until one to four years after the appearance of symptoms definitely pointing to a serious disease in the urinary tract. There was no operative mortality in the cases reported. One patient developed a moderate cystitis after *x*-ray therapy and another showed a moderate reaction after radium. Two patients developed small calculi in the bladder several months after operation, but were relieved by crushing the same with the lithotrite.

Plight of the Middle Class

In recent surveys conducted by a large insurance company in certain large cities of the United States it was discovered that over 11,000 persons were so sick as to be disabled for work. Of this number, over 25 per cent of the number disabled were not attended by physicians, partially for the reason, presumably, that they could not afford to pay for one.

Dental work, also, is neglected when income is inadequate. Surveys made in recent years in certain cities disclose a deplorable lack of attention to the teeth on the part of the large majority in all income groups.

When people cannot afford the services of reputable practitioners, there is a tendency to patronize quacks and resort to inferior types of treatment. Many people undertake self-treatment when unable to pay for medical attention.

Unquestionably there is a big gap between the very rich and the very poor which medical science must bridge in order to give adequate medical service to persons of average income.

But even more important than treatment for illness is the periodic medical physical examination. Periodic physical examinations are valuable not only for the early detection of disease but also serve as a guide in the selection of suitable employment for those with known defects.

Atonic Dyspepsia

Seng is remarkably effective in atonic dyspepsia, and physicians who use it once rarely fail to continue to employ it thereafter in all indicated cases. In all gastro-intestinal conditions dependent on want of tone or lack of peptic secretions, it is an ideal remedy. In convalescence from fevers, enteric disorders and in general run-down states, Seng is of exceptional value by reason of its tonic effect on the glands of the digestive tract. Most physicians today give very little pepsin, preferring rather to use a remedy like Seng that will encourage the stomach to do its own work.

Urology for the General Practitioner

III. Acute Pyelitis with Hyperpyrexia Supervening an Old Septic Renal Infarct*

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This case-report was originally read before the Section of Genito-Urinary Surgery of the New York Academy of Medicine, on April 21, 1926, under the title and diagnosis of "Acute Pyelitis with Hyperpyrexia," which in the immediate relief of symptoms appeared to be proved:

The extreme difficulty of diagnosis in urology even with the best modern methods and with consistent care is demonstrated by the later course of the case and the operations subsequently believed to be necessary.

I would repeat that after all diagnosis consists of four elements:

1. A careful history.
 2. A complete examination.
 3. All forms of laboratory investigation applicable to the condition and
 4. The findings at operation or the results of nonoperative treatment.
- Even these apply only to the living patient. An autopsy is often the only absolute means of full diagnosis.

This case illustrates the importance of cystoscopic examination of the bladder and separate tests of the kidneys in the presence of any obscure abdominal pain not explicable through ordinary medical and surgical physical examination, and further defines the scientific duty of relieving embarrassed kidneys by physical measures as immediately and as far as possible. Because of abdominal pain which had not been carried to a logical diagnosis an appendectomy had been performed on the young nurse about three years ago. Exact pathologic diagnosis of the specimen could not be obtained from the hospital but the report was a simple appendicitis. This may perfectly well have meant and probably did mean that the girl did not have a true appendicitis but was in the midst of her first attack of acute pyelitis. If a full urinalysis for bacteria and an examination of the bladder and kidneys had been done in the presence of this irregular attack of pain, it is certain that the distinction between pyelitis and appendicitis would have been instantly established.

There are a few points about pyelitis which family practitioners, general surgeons and younger urologists may not fully comprehend. They arise from the anatomy, physiology, pathology and pathogenesis of the renal pelvis.

Anatomically the pelvis is developed as part of the mucous membrane system of the urinary organs. Therefore, its mucosa is continuous with the epithelia of the renal tubules and the mucosa of the surface of the papillae. On this account it is probable that no involvement of the pelvis can occur without secondary or concomitant effect on the kidney, either as a sympathetic or as a pathologic process, whose character and intensity agree with the condition in the pelvis.

The pelvis may properly be regarded as a primary bladder or collecting pouch. Physiologically this collecting pouch has all the papillae directed and evacuating their tubules into it. Its funnel-like form allows it to embrace the entire excretory surface of the kidney around the hilum and to drain all its accumulation into the ureter as its outlet. The lumen of communication is always small and may therefore be easily occluded in inflammation by oedema, mucus, pus or blood.

Pathologically the pelvis through its mucosa partakes of all the peculiarities and tendencies of every mucosa as to infection and inflammation: oedema, infiltration, exfoliation, ulceration and healing with or without permanent damage. Also like all mucosa, the lining of the renal pelvis is slow to recover and may never fully restore its resistance and may even go on to relapses at regular or irregular intervals.

In pathogenesis, like the symptoms referred to the urinary bladder, those produced by pyelitis may be very profound and acute for a short time exactly as in this patient or trivial and mild. Just as the renal pelvis is the analogue of the urinary bladder in being a collecting pouch, so is the ureter the analogue of the urethra in being a tortuous canal of varying diameter and direction. From this close equality it follows that when the ureter is more or less suddenly obstructed at its inlet by acute pyelitis, pain, muscular rigidity, and other symptoms of profound disturbance arise and are closely comparable with similar symptoms in the bladder when the urethra is closed. Urology has few cases more severe than obstruction, distension and infection of the bladder, and respect for the pelvis of the kidney in the same condition is slowly and surely being given.

Another feature in acute pyelitis not fully comprehended by family practitioners, general surgeons, and younger urologists is that the opposite kidney is an important factor clinically speaking. In an initial attack the opposite kidney may be as painful or more painful than the affected organ for about twenty-four hours more or less until it compensates for the congestion of overaction thrown upon it. The great importance of this detail is that it requires immediate cystoscopy and ureteral catheterization to locate the diseased kidney-pelvis. When there is a history of several attacks, as in this case, and further when the normal organ is not tender, also as in this case, the meaning is that full compensation has already been well-established and that therefore one has plenty of time in which to study the case rather in favor of nonoperative than of operative measures, no matter how severe the symptoms may seem to be for a few hours. If these facts had been remembered after the case passed out of the author's hands, as hereinafter stated, a needless and unjustified exploration of the diseased kidney would not have occurred.

If in addition to all these circumstances we have the peculiarity in the patient of an unusual febrile movement in response to almost any urinary disturbance, then we have an easy explanation for an initial temperature of 105, 106 or 107 F. The general perspective of this case shows that this young woman undoubtedly belongs to the type who among males will have a very high temperature, often a chill and various urinary disturbances after so simple a proceeding as passing a sound. Hence, a high fever in the presence of urinary disturbance must be studied with greater caution than one in other conditions because of these general facts.

During August, 1925, a frank attack of pyelitis occurred which yielded under dilation of the ureter, drainage and irrigation of the pelvis and other expectant

* Read at the meeting of the Section of Genito-Urinary, Surgery of the Academy of Medicine, April 21, 1926.

methods. The young woman remained under observation of one of the assistants of the author's clinic and underwent continuation of the foregoing treatment. In the interval she was never without a tendency toward fever and sometimes actual fever with constant pyuria and occasional haematuria. These conditions possessed a double meaning. First that the kidney pelvis had not recovered, and second that there was probably a focus of toxic absorption. The next frank outbreak began on the 12th of November, 1925, with a rise of temperature to 107.8 F. controlled by two thermometers. There was no violent chill but a disagreeable creepy sensation. For several days the temperature varied from 98+ F. to 104+ F., so that on November 17 the patient was prepared for exploratory aspiration or operation. Aspiration in six different directions of the perirenal space was negative for pus. Major operation was postponed for at least twenty-four hours for the following reasons: 1. Although the temperature was high and variable, the facies and general condition were not those of active septic or uremic absorption; 2. nothing whatever had been done to relieve the embarrassed kidneys, by members of the medical and surgical staffs and by the author's chief of clinic, all of whom had had close contact with the patient until the author was directly requested by the superintendent of the training school to take charge. Several consultations all tended to the opinion that the kidney would have to be operated on but for the foregoing reasons the writer stood temporarily fixed in the opinion that no operation should be attempted at least before the results of wide and deep decongestion by radiant light applied to the kidney zones had shown what could or could not be accomplished. Four applications of radiant light a day at four-hour intervals for thirty minutes each sufficiently intense to make the skin red and promote active sweating were begun. Within twenty-four hours the patient began to improve. The general plan of nephritic management, free urinary antisepsis and regular radiant light diaphoresis were continued until about December 25, when the patient was allowed to go home for a vacation of at least two and possibly four weeks, under the care of Dr. James A. Gardner of Buffalo, N. Y. He agreed absolutely in the diagnosis and continuation of the treatment.

As soon as the condition permitted the patient to leave her room, it was decided to find if possible the focus of infection beginning with her teeth and if necessary terminating with the flora of her intestines. X-Ray photographs of her teeth showed abscesses at the apices of three including roots broken off during an extraction. The streptococcus and staphylococcus in pure culture were found in each of these abscesses. It was immediately felt that the focus had been discovered and removed, and that unless the patient failed to make consistent progress, further investigation as of the intestines would be unnecessary. About March 15, 1926—three months after the subsidence of the second attack, it may be said that her urine is perfectly free of pus and bacteria, her condition is that of absence of all pain and disturbance in the kidney, urination normal, and all general conditions most satisfactory. It seems quite fair to say that this case illustrates the advantage of conservative nonoperative measures in the presence of doubtful symptoms of a pus pocket in or around a kidney. The first attack occurred during the vacation of the author and as a courtesy to his chief-of-clinic the second attack was left in his hands until the question of operation arose.

A comparison in parallel columns between the first and second attacks is worth while, and is shown in this table as to its salient points.

| | First Attack—Not under the Author's Charge | Second Attack—Under the Author's Charge after November 17, 1925 |
|------------------|---|--|
| Data | First Attack—Not under the Author's Charge | Second Attack—Under the Author's Charge after November 17, 1925 |
| Data | First Attack—Not under the Author's Charge | Second Attack—Under the Author's Charge after November 17, 1925 |
| Data | First Attack—Not under the Author's Charge | Second Attack—Under the Author's Charge after November 17, 1925 |
| Dates: | September 20 to October 14, 1925 | November 12 to December 25, 1925 |
| Temperature: | Not specially high or variable | Very high at first, slowly decreasing with many variations |
| Malaise: | Highly variable Often depressed Headache occasionally | Same Same Same |
| Chill: | September 21 for 10 minutes | On admission as chilliness, no prolonged chills followed by rise of temperature except after removal of teeth |
| Fever: | None | |
| Chill: | October 4 for 12 minutes | |
| Fever: | 103.6 F. | |
| Chill: | October 7—Brief | |
| Fever: | None | |
| Pain: | Right kidney and ureter | Right kidney and ureter. Left side negative |
| | Marked | Sticking and variable, sometimes absent or extreme |
| | Increased by indwelling catheter | Indwelling catheter not used. Left side negative |
| Tenderness: | Right kidney and ureter | Right kidney and ureter |
| | Marked | Moderate. Left side negative |
| | Increased by Murphy percussion | Increased by bimanual palpation |
| Cystoscopy: | September 30, practically negative | Murphy percussion omitted |
| Pyelogram: | September 30, suggested moderate old pyelitis | December 21, negative |
| | None | |
| Kidney Function: | | |
| L. Kidney: | Dye appeared in three minutes | Practically normal at end of attack |
| R. Kidney: | Dye appeared in ten minutes | Practically normal at end of attack |
| Fluid Intake: | Not observed | From few ounces to more than a quart |
| Fluid Output: | Not observed | From few ounces to more than a quart |
| Urinalysis: | | |
| Pus: | Marked, variable, decreasing | Same |
| Casts: | Very few and simple | Same |
| Blood: | Deposit September 27, greatly increased on September 30, by dilatation and retention of catheter, removed on the third day followed by disappearance of blood | November 13 deposit by night and by catheter following day. No ureteral catheterization or dilatation |
| Urine Culture: | None | Nov. 21: Gram-negative bacilli unlike any pathogenic organism Dec. 12: Staphylococcus Albus Nov. 23: N. P. N. 9.4, urea 5.0 Nov. 24: N. P. N. 22.0, urea 10.8, creatinin 1.3, uric acid 3.0 |
| Blood Chemistry: | Not taken | |

| | | |
|-----------------------|-------------------------------------|--|
| Blood Culture: | Oct. 14: No growth after 72 hours | Nov. 21 and Dec. 12, negative |
| Malaria: | Negative | No specimen taken |
| Blood Counts: | Sept. 26: Oct. 6: | Nov. 12: Nov. 17 |
| Haemoglobin: | 85% 60% | 70-75% Omitted |
| Red B. Cells: | 4,600,000 3,900,000 | 4,200,000 Omitted |
| Leucocytes: | 7,400 11,600 | 6,800 18,000 |
| Poly's: | 74% 70% | 63% 47% |
| Lympho's: | 25% 30% | 36% 53% |
| Treatment: | | |
| Nonoperative: | Dilatation of right ureter to 11 F. | No dilatation: considered too disturbing |
| Elimination: | No direct effort | Very direct and immediate effort |
| Radiant Light: | None | 4 times a day, 30-minute sittings to tolerance. Reaction and benefit immediate |
| Hot Pack: | None | None |
| Drugs: | Usual urinary antiseptics | Urotropin until free formaldehyde appeared in urine |
| Operative: | None | Multiple aspiration of posterior and lateral kidney zone—negative for pus |
| Sources of Infection: | | |
| Teeth: | No investigation | Four teeth infected, removed Dec. 2 (1), Dec. 7 (2), Dec. 12 (old roots) Chill or fever after each removal |
| Nose: | No investigation | Negative (2 examinations by Dr. Tieck) |
| Sinuses: | No investigation | Negative (2 examinations by Dr. Tieck) |
| Intestines: | No investigation | Temporarily omitted on account of dental findings. Constipated and almost certainly the victim of colon bacilluria |

Aftertreatment. As soon as the last of the teeth were removed, the patient was allowed up and about with increasing exercise. She was finally sent home for a vacation to Dr. James A. Gardner who corroborated all the findings and continued the treatment and returned her to the author supposedly well.

Subsequent History.—Soon after this the patient left the hands of the author, and another attack developed and an exploratory operation was done during the first few days of high fever and acute symptoms. The kidney was delivered with difficulty only after resection of the twelfth rib. Upon very careful inspection and palpation, no surgical lesion was found. One spot seemingly softer than the balance of the organ was aspirated but no pus recovered. Thus the original opinion of the author was corroborated that in no sense was this a case for hasty operation but rather one for continued study and work-out. The diagnosis on which the operation was done was cortical abscess. The comment on this diagnosis is fair that not only was no cortical abscess found at the operation but also was the history of repeated attacks not in agreement with the course of cortical abscess. Just as one sees unilateral tuberculosis and other unilateral kidney infection so may one perfectly well see unilateral pyelitis with or without definite involvement of the kidney.

It is unfortunate that when this particular attack had begun the same radiant light treatment was not resumed on the assurance that it might or would quiet the condition at least so that ample opportunity would be afforded to study out the flora of the intestine as a source of infection exactly as the teeth had been found to be one factor.

Now that this other attack has supervened and unfortunately an operation done, the case is thrown into the group of abnormally placed kidneys, infected, and almost

sure to become surgical in the strict sense sooner or later. Study of the influence of the intestinal canal and its flora upon this kidney should have been done because now very much in order.

A short time after recovery from this operation another attack appeared and at the insistence of the patient a nephrectomy was performed. When the kidney was longitudinally divided an old semicircular infarct was found surrounded by recently damaged kidney substance. No free pus and no culture were demonstrated. The pelvis was diseased and the rest of the parenchyma quite normal to the naked eye. The obvious age of these processes as the writer looked at the specimen still brings up the thought that a final bacteriologic diagnosis and persistent physical therapy, such as diathermy and phototherapy, may well have saved that kidney by completing the healing about the old infarct exactly as one sees from time to time tuberculosis heal and so remain in any other part of the body.

Final Diagnosis: Right acute pyelitis with early but not extensive involvement of the kidney substance by toxins from the teeth rather than by bacteria. The general type of the lesion was an atypical infarct. The streptococcus and staphylococcus found at the apices of the roots of her teeth were never detected in the blood or in the urine, or in the kidney. The intestines through constipation may have been the source of the bacillus coli in her blood and urine, but it was also never detected.

Conclusions

The lessons impressed by such a peculiar case are: 1. the wisdom of urologic examination including cystoscopy and kidney function in all cases of doubtful abdominal pain.

2. The necessity of relieving the urinary system from overwork by the application of external heat preferably by the newer methods of physical therapy, or when these are not available by the older methods such as the hot pack.

3. The wisdom of postponing operation as long as the patient continues to do well in general condition, elimination and temperature.

4. Pus in the urinary system is frequently due to infection elsewhere, and after any attack of pyelitis this infection should be sought. In this case the teeth proved to be one source of the renal damage. The recent attack indicates that there must be another source, which is probably the bacillus coli filtered into the blood stream from the intestines and attacking an already damaged kidney.

5. Acceptance of great variations between intake and output of fluid administered to increase the kidney function. Active diaphoresis due to radiant light or the hot pack, of course, produces oliguria. The system must be cleared of toxins by the skin and the bowels when the kidneys are not in full function. The improvement in this patient immediately upon diaphoresis is one of the most significant features in the record.

A case of this kind is uncommon, but it is so instructive that although it is a solitary example of a definite type of lesion and pathogenesis, it is worthy of publication.

45 West Ninth Street.

Mortality for Negro Babies

Infant mortality rates on negro children in comparison with those of the white population of the same cities, show that in 1924 Leavenworth, Kan., had the largest death rate of negro babies, in proportion to births, of any city of the United States which was included in the statistics, according to data just issued by the Department of Commerce. The Leavenworth death rate, of 615.4 per 1,000 live births, is balanced by Montclair, N. J., with a negro infant mortality of 18.9 per 1,000 live births.

Inguinal, Femoral, Tubal, Ovarian and Tubo-Ovarian Herniae

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(Concluded from July issue)

Torsion

Torsion of the pedicle of the hernial contents was demonstrated in two ovarian (4, 54) and in ten tubo-ovarian (3, 4, 8, 22, 43, 51, 53, 54) herniae. All these herniae were inguinal in location, irreducible in type, occurred in infants from two (22) to ten months (3) old and presented symptoms and anatomical changes suggestive of strangulation. In all, the circulatory disturbances were due to the torsion and not to the strangulation of the pedicle. In case 3, the neck of the hernial sac did not constrict the pedicle and the torsion could be seen extending into the abdominal cavity. The pedicle usually consists of the tube, broad ligament and ovarian vessels and may be twisted either once, twice, thrice or four times (56). The torsion takes place suddenly or gradually around the pedicle's long axis, usually in a clock-wise direction and may or may not extend into the abdominal cavity. Should the torsion be unrelieved, the vessels at the site of torsion become constricted, thrombosed and the organ or organs distal to the twist become purple-black: Congestion, stasis, edema, thrombosis (22) or gangrene may supervene. Interstitial hemorrhages and serous transudates occur and lead to tissue-dissociation. The anatomical integrity of the herniated organ or organs may be so impaired that their return to the abdominal cavity would be dangerous and is contra-indicated. "Tube was edematous and showed necrotic areas. The blood vessels were thrombosed and there was extravasated blood in the lumen. The ovary was gangrenous" (43). Torsion determines the same lesions as strangulation.

Tubal Herniae

In fifteen herniae (five inguinal and ten femoral), the tube, in part (ampulla and fimbriated end—16, 58) or in its entirety, was the sole viscus present in the hernial sac. In some cases, the tube was free; in others, partly or wholly adherent. In cases 19, 24 and 55, the tube escaped into the sac by its middle portion and was so bent into a loop that the uterine and fimbriated ends, both, were intra-abdominal. Tubal herniae are reducible, sliding (24), irreducible (7), strangulated (25) or the seat of torsion. Strangulation was present in nine cases. As associated hernial contents, we note a cyst attached to a fimbria (19), a loop of small intestine (23), etc.

Ovarian Herniae

In one bilateral (27) and in seven unilateral herniae (one femoral (26), six inguinal), the sole hernial sac-content was the ovary of the corresponding side. In three cases (47, 54—2 cases—), the ovaries being normal, were returned into the abdominal cavity. In case 26, the sac contained an atrophied ovary. In the bilateral hernia (27), a polymicrocystic ovary was bound to the left hernial sac by a band, embryonic or inflammatory in origin. In the right hernial sac, the ovary was free and easily reducible into the abdominal cavity. In case 20, "the sac intimately encased the ovary. The inferior and posterior aspects of the organ were, through the exudate covering, firmly adherent to the round ligament and the inguinal canal."

Associated contents were present in the following three cases: In one case (26), the hernial ring greatly constricted an omental mass; at the lower end of the sac, there was a large follicular ovarian cyst. In case 52, the sac-contents were the ovary, some omental tissue and a loop of the transverse colon. Case 12, a foot-ball sized hernia, contained almost the entire small intestine, the omentum, the ascending, transverse and a part of the descending colon. At the bottom of the hernial sac was a two-fist sized dermoid cyst containing sebum, bones, teeth, hair and the remains of the ovary.

Tubo-Ovarian Herniae

The close anatomical and functional relations existing between the Fallopian tube and the ovary explain the not uncommon combined presence of these two organs in the same hernial sac. Tubo-ovarian herniae can be viewed as a frequent terminal stage either of tubal or of ovarian herniae. These two organs do not always have in a herniated sac the same reciprocal relations that they normally have in the abdominal cavity. In thirty-nine cases, the hernial sac contained, in addition to hernial fluid, only the tube, in part or in its entirety, and the corresponding ovary. In one right-sided inguinal hernia, operation revealed the presence in the hernial sac of both ovaries and the left tube (1).

In six cases, the hernial sac contained in addition to the ovary, the fimbriated end and the ampulla of the tube (2, 3, 10, 22, 31, 42). In case 28, the tube, one and one-half centimeter from its uterine end, had escaped from the internal ring and was so looped in the hernial sac that its free end, though gangrenous, still lay in the abdominal cavity. We found a group of tubo-ovarian herniae in which the uterus (14, 36, 37, etc.) was an associated hernial sac-content. Case 36 was a strangulated right inguinal hernia having as sac-contents a senile uterus and its left adnexa. In case 29, the sac contained the uterus, both tubes, both ovaries and a knuckle of small gut; in case 30, the tube, the ovary and the uterus harboring a billiard-ball sized fibroid. In four cases, a loop of intestine, small (41, 45), large (17, 54), had accompanied the tube and ovary into the hernial sac. A few cases warrant special mention. In case 14, the sac contained the uterus, both tubes, both ovaries and an ovarian cyst eight centimeters in diameter. In case 17, one of the sac-contents was a pregnant tube distended in its center at the site of the ovum. In the course of forcible and unsuccessful taxis, the tube was ruptured and hemorrhage into the sac and into the free peritoneal cavity resulted. The undisturbed ovum could easily be seen through the perforation. In case 57, a loop of small intestine and (one portion of the hernia was soft, painless and reducible and the other portion was hard, painful and irreducible) the stomach were associated contents.

Pathology

The ectopic location of an organ is unfavorable to its maturation and to its anatomical and functional integrity (Broca). The tube and ovary present in a hernial sac lack their natural protection, are exposed to slight or

marked impairment, to repeated slight traumatism, to pressure, to the circulatory disturbances incident to irreducibility, to strangulation and to torsion of the mesovarium or mesosalpinx. The herniated organ or organs may be practically normal; in fact, in infancy, almost always, unless the hernial contents be irreducible, strangulated or twisted. Not uncommonly, they present slight or marked pathological and degenerative changes. If the displacement is congenital or antedates puberty, full maturation of the herniated tube and ovary is unlikely. Polymicrocystic degeneration and cystomata of the herniated ovary are not unusual (1, 4, etc.). The herniated organs may be the seat of infectious or neoplastic processes which have developed either before, during or after the descent of the adnexa into the sac. These pathological processes may extend to the hernial sac, may originate in the sac.

One, more or all of the herniated contents may be inflamed (Hernial salpingo-ovariitis—49). Inflammation, here as elsewhere is acute, subacute or chronic, varies in extent, duration, intensity and type, extends by way of the lymphatic channels and by continuity or contiguity of tissue and originating in the tube may spread to the ovary; the converse may occur. Inflammation of these organs terminates in resolution, fibroid thickening, suppuration or gangrene and leads to dysfunction, marked structural impairment, fixation, constriction or virtual destruction of the herniated organ or organs. Adhesive inflammation commonly converts a reducible hernia into an irreducible one and may cause partial or complete tubal compression or occlusion. Both adnexa may be embedded, even encased, in fibrous tissue of inflammatory origin. Hernial salpingitis, acute or chronic catarrhal or suppurative, not infrequently evolves in a hernial hydrosalpinx or a hernial pyosalpinx (11, 49). The removed mass consisted of a pyosalpinx and a sclerotic and cystic ovary (11).

The herniated contents are often intensely congested, infiltrated (8), thickened, infarcted (10), ecchymotic or sclerosed. The sac may participate in the pathological processes existent in the hernial contents. Inflammation may be the cause or the sequel of irreducibility, strangulation or torsion. If the hernial sac be inflamed, a hernial peritonitis is existent which may lead to a localized or diffuse peritonitis. Fluid is often found in the sac: Yellowish (9, 34), brownish (25), greenish (40), bloody (13, 25, 33), turbid (58).

Etiology

Lack of space does not allow more than the mere enumeration of the more important predisposing causes of herniae of the uterine adnexa. For a hernia to develop, there must be present: 1. An opening large enough and a canal patulous enough to admit the entrance of a viscus; 2. A viscus or viscera mobile enough to allow its or their displacement into a preexisting or developing hernial sac; 3. A force or an attraction that propels or attracts the viscus through the patulous opening and canal. The presence of a Fallopian tube, an ovary or both, in the sac of an enterocele (57) or in that of an epiplocele is due, not uncommonly, to its having been dragged therein by intestine or omentum to which it became adherent while in the abdominal cavity.

The etiological factors of herniae in general are equally potent in the causation of tubal, ovarian or tubo-ovarian herniae. Heredity is an important causative factor (52). Mental and physical characteristics are transmissible. Like structural traits beget like resistance and like predisposition to deformities and diseases. Herniae are often an expression of arrested or defective development and are found, not rarely, in ascend-

ants and descendants of hernia-bearing individuals.

There is disagreement among clinicians as to the actual exciting cause of herniae. The conditions favoring hernia development frequently exist when herniae are non-existent. Non and incomplete obliteration of the canal of Nuck, apparently the homologue of the processus vaginalis peritonei in the male, and other preformed peritoneal sacs predispose to inguinal herniae formation. The irruption of a tube, ovary or tube and ovary into a preformed peritoneal diverticulum or into a preexisting hernial sac has received previous mention.

Developmental defects and weakened areas, congenital or acquired, of the abdominal wall do not cause herniae but are sites of potential herniae; a potential hernia may become an actual one. From the etiological and therapeutic standpoints, the following not-uncommon accompaniments of inguinal herniae are significant: Undue shortness or mal-development of the round uterine ligaments, of the ovarian ligaments, malformations of the internal genitalia, deficiency, moderate or marked, of the internal half of the inguinal canal, imperfect or arrested development of the internal oblique muscle.

All pathological and quasi-pathological states associated with marked increase of intra-abdominal pressure overdistend the abdominal parietes (16), enlarge, dilate and widen the orifices normally present in the muscular and aponeurotic layers of the abdominal wall. They further predispose to hernia formation by loosening the subperitoneal connective tissue, by relaxing and stretching the mesenteric and other visceral attachments. Gestation increases the mobility and the laxity of the ligamentous supports of the uterine adnexa. Frequent pregnancies repeated at short intervals constitute by far the most important quasi-pathological state associated with increased intra-abdominal tension. Parturition, early arising after confinement, obesity, etc., are other common causes. "Immediately following delivery she was seized with severe pain in the left lower quadrant of the abdomen and noticed a small protrusion in the left inguinal region about the size of a hen's egg" (14).

The frequent repeated and forcible increase of intra-abdominal pressure, associated with occupational muscular exertion, with vomiting, coughing and crying spells (43), missteps, habitual constipation, etc., is an undoubted causative factor. During defecation, the gravid Fallopian tube was expelled into and incarcerated in the hernial sac (17).

Diagnosis

So as to preserve the integrity of the tube and ovary, herniae of the uterine adnexa must neither be overlooked nor misdiagnosed. They always should be subjected to operative treatment in their incipency, preferably before irreparable degenerative changes have taken place in the herniated organs.

The diagnosis of hernia is usually self-evident. In female subjects, the presence in the inguinal or femoral region of a visible and palpable mass, painless (27, 37) or painful, movable or fixed, should suggest to the clinician the possible existence of an adnexal hernia. Many factors influence the clinical picture. In the complicated types, the pain varies from mild discomfort to marked distress. The symptoms vary with the age of the patient, the genital organs displaced, the anatomical and clinical type of hernia, the coexistence of malformations, adhesions, infections, tumors and the presence of other saccular contents (14). Percussion (29), owing to the small volume of most of these herniae, and to the many pathological processes of the inguinal region, is of little differential diagnostic aid. In a few cases, an expansile impulse on coughing (34, 55), on crying

(29) was noted. The reduction of adnexal herniae is unattended with gurgling sounds.

It is easily understood that the symptom-complex presented by an uncomplicated bean-sized ovarian hernia differs from that of a tubo-ovarian hernia having as associated contents small intestine and a part of the stomach (57). Symptoms due to the presence or disease of the associated contents will not be discussed.

The surgeon after diagnosing the swelling to be a hernia, determines its anatomical type—femoral or inguinal—and acquaints himself with the nature and the condition of the hernial contents. If the hernial swelling be labial, if its larger part be above an imaginary line extending from the anterior superior iliac spine to the pubic spine and if the inguinal canal is occupied by the hernial pedicle, the hernia is inguinal. In a femoral hernia, the swelling is not labial, its bulk is below the ilio-pubic line, the inguinal canal contains no structure outside of the round ligament and accompanying vessels and nerves, and the crural canal is occupied by the hernial pedicle. "The finger could be passed into the inguinal canal for a short distance" (40). As the crural canal and the femoral rings are incapable of great enlargement, femoral herniae seldom attain a large size; they are often overlooked.

Previous to operation, the nature of the sac-contents is more frequently suspected than actually known. It is not astonishing that these cases furnish so many operative surprises, as short of actual demonstration by operation, there is no conclusive evidence of the nature of the hernial contents. In a hernia containing intestine, omentum, ovary and tube an exact diagnosis is hardly possible before the intestine and omentum have been returned to the abdominal cavity and movement of the herniated adnexa elicited by rectal, vaginal or vagino-abdominal examination.

Uncomplicated herniae of the uterine appendages have few symptoms. In the simpler forms, the symptoms do not differ much from those observed in small enterocoeles or epiploceles. In the presence of irreducibility, strangulation or torsion, additional symptoms characteristic of these respective complications are added to the clinical picture. In herniae of the uterine appendages occurring in adults, a vagino-abdominal examination may enable the examiner to detect the lateral deviation of the uterus towards the hernial side. In a few cases, the impact of the vaginal finger against the uterus is transmitted to the herniated organs and discerned by the hand overlying the hernia. Rectal examination is of less value; in children, it is needless. These herniae may, at times, be differentiated from intestinal herniae by roentgenography. In case 57, radiographic examination showed that a part of the stomach had escaped into the sac.

Usually, a reducible inguinal or crural hernia is a painless, palpable, often elastic (15) mass in the groin or in the femoral region. Herniae differ in volume. They may be bean-sized (17), pigeon-egg sized (22, 33, 34), egg-sized (11, 16, 28), apple-sized (36), foetal-head sized (14), etc. The hernial tumor mass usually has its long axis in the direction of the inguinal canal. Associated contents may so increase the hernial volume that micturition, defecation and locomotion (12) are hindered. In case 12, the hernial swelling was a football sized ovoid tumor presenting at its inferior pole a cutaneous necrotic area surrounded by an eczematous zone. The presence of associated contents may so obscure the clinical picture that, previous to the operation, the clinician is totally unaware of the presence of uterine adnexa in the hernial sac.

A complete inguinal hernia produces a labial swelling enlarged by any increase of intra-abdominal pressure, such as is caused by coughing (34), vomiting, crying, lifting and other forms of muscular exertion, etc. The labium majus may show great distension (13); the hernia may simulate a labial abscess (30).

Outside of a sensation of traction (14), discomfort, tension (24), heaviness in the region of the tumor, reducible herniae usually cause no disturbance. The pain is attributed, by some authors, to traction on the broad ligament. Sometimes with the advent of irreducibility and always with that of strangulation or torsion, tenderness and pain, more or less pronounced, supervene.

Irreducible herniae admit of only slight motion (44) or are nonmovable (20). Short of a cutting operation, their contents cannot be returned into the abdominal cavity. Non-reducible herniae are associated with more discomfort than reducible herniae and the pain and tenderness incident to them are increased by coughing (15), truss-pressure (26, 40), the menses (9, 16), injudicious attempts at reduction (26), etc.

The symptoms of strangulated and twisted adnexal herniae bear great resemblance to those offered by intestinal herniae incompletely strangulated. With torsion as with strangulation, pain and the other subjective symptoms of inflammation are intensified. It is important to bear in mind that, in strangulated and twisted adnexal herniae, there is no stoppage of the passing of flatus (7, 10), no stoppage of the fecal current (25). When vomiting occurs, it is alimentary (10), mucous or bilious (19) but never fecal in nature. In strangulated and twisted herniae, the local pain is marked; most always, it radiates throughout the abdomen. Slight tympanites may be present (11, 17, 22). In the irreducible, strangulated and twisted herniae, expansile impulse on coughing was absent (33, 40, 49, 50, etc.).

Treatment

Herniae of the uterine adnexa call for early and permanent operative relief. If the patient's general condition be such as to permit a surgical procedure of great simplicity and benignancy, taxis and truss treatment are to be rejected. The ovary and the Fallopian tube are too delicate and too important to be subjected to the dangers of truss-pressure and to the circulatory disturbances and repeated traumatism incident to ectopic location.

The operative relief of election meets successfully two indications:

a. The return of the herniated contents to their normal habitat.

b. The closure of the hernial opening, followed by rational repair and strengthening of the abdominal wall at the hernial site. The operative relief of necessity sacrifices the herniated uterine appendages but effects the obliteration of the hernial sac and the upbuilding of the weakened hernial area.

All the cases discussed in this article were subjected to operative treatment. All recovered but one, a three-month old infant (48). Recovery in almost all the cases was rapid, uneventful and complete. Case 43, a six-month old patient, was put to the breast twelve hours after unilateral castration for torsion of a herniated tube and ovary. Case 58 refers to a five-month pregnant woman successfully operated for a strangulated femoral tubal hernia. Gestation continued uninterrupted. In case 24, recovery was complicated by a post-operative thrombosis of short duration.

Herniotomy, most always, is an operation of great simplicity. In adults, it can be successfully performed

under local anesthesia; in children, general anesthesia is always preferable. Local anesthesia (5), novocaine (10, 23) was used in three cases. Spinal anesthesia (36), syncaïne (11), stovaine (49) was also used in three cases. In the seventy-two remaining cases, general anesthesia was employed: Ethyl chloride (17), in one case; chloroform (5, 8, 9, etc.) and ether (25, 31, 43, etc.) in all the others.

There were three bilateral herniae: one ovarian (27) and two tubo-ovarian (35, 42). In case 27, the left ovary, enlarged, adherent and cystic, was removed; the right ovary being normal was returned to the abdominal cavity. In case 35, the acutely strangulated left tube and ovary were removed; nine weeks later, the herniated right tube and ovary, both normal except as to location, were replaced. In case 42, the adnexa were reduced.

In thirty-six unilateral herniae, the hernial contents (ovary, 4 cases; tube, 11 cases; tube and ovary, 18 cases) were replaced into the abdominal cavity. In one case (54), owing to the presence of dense adhesions, I experienced great difficulty in effecting the reduction of the herniated tube, ovary, omentum and loop of gut. Ludington's (29) nineteen-month old patient presented an indirect inguinal hernia containing the uterus, both tubes, both ovaries and a small knuckle of intestine; all these sac-contents were returned to the abdomen.

In thirty unilateral herniae (ovarian, 2 cases; tubal, 4 cases; tubo-ovarian, 24 cases), the hernial contents: ovary, tube or tube and ovary, were removed either in part or in their entirety. In case 37, the reporter merely explored the hernial contents through the herniotomy incision; he then removed through a median laparotomy incision the rudimentary internal genitalia.

The following eight cases call for additional comments. In two tubo-ovarian herniae (11, 50), the removed tube was a pyo-salpinx. Under the caption, ovarian herniae, the contents of case 12 were enumerated; the dermoid cyst and the cystic ovary were removed and everything else was reduced. Schoenmeier (14) ablated all the hernial contents: uterus, both tubes, both ovaries and an ovarian cystoma. Moure (23) first replaced the prolapsed loop of gut and then resected the herniated tube. Unterberger (36), through a herniotomy incision amputated supra-vaginally the uterus and resected the left adnexa. In case 52, the herniated ovary was resected; the other hernial contents were returned to the abdominal cavity. In case 57, the replacement of the herniated gut and stomach was supplemented by ablation of the left tube and ovary. Seibold (13), for the cure of an irreducible tubal hernia, performed a herniotomy and a laparotomy. He ascertained that the non-herniated tube was normal, the non-herniated ovary cystic and the uterus normal, though small. The disposition of the hernial contents is not reported.

The uterine appendages should never be needlessly sacrificed. Their loss is a mutilation. It behooves the surgeon to be conservative. Previous to and during the child-bearing period, in the absence of lesions permanently impairing functional and anatomical integrity, a reducible herniated ovary or tube should never be removed if, by operation, reposition within the abdomen can be effected and recurrence of the displacement prevented. At or near the menopause, the removal of the uterine adnexa is of less significance as these organs are at that period of negligible importance.

The herniated organ or organs should be reduced operatively:

a. In all uncomplicated ovarian, tubal and tubo-ovarian herniae if the hernial pedicle is normal, if in-

flammatory adhesions are absent and if the herniated viscus or viscera be not the seat of anatomical changes.

b. In all complicated tubal, ovarian or tubo-ovarian herniae, if the lesions be discrete and susceptible of recovery or when the herniated organ or organs are not irreparably damaged. If the anatomical integrity of the herniated organ or organs is but slightly impaired, the patient's interests are best served by replacing the adnexa into the abdomen; the lesions usually regress and anatomical restoration ensues.

c. In all irreducible herniae:

1. In the absence of inflammatory adhesions.
2. In the presence of adhesions admitting separation or cleavage without crippling of the adnexa.
3. In the absence of inflammation, strangulation or torsion.

Removal of the herniated tube, ovary or tube and ovary is indicated in all tubal, ovarian or tubo-ovarian herniae, if the hernia be the seat of:

a. Tubal or ovarian gestation.

b. Strangulation, when great doubts are entertained as to the vitality of the herniated organ or organs as when the acutely inflamed hernial contents after liberation of the constriction and application of warm compresses fail to resume a normal appearance. The excellent prognosis in these cases differs from the somber prognosis of strangulated intestinal herniae.

c. Torsion. In all the reported cases of torsion, the herniated adnexa were removed. The sacrifice of the herniated tube or ovary with a twisted pedicle is necessitated by the single or associated presence of various pathologic states. The most important of these are swelling, edema or gangrene, inflammatory in nature; hemorrhagic infiltration and tissue dissociation, infarcts, thrombosis of the vessels at the seat of torsion.

d. Underdevelopment or malformation.

e. Irreducibility. If reposition be impossible (59, 15-tubal resection) or needless (16). In all the irreducible herniae but one in which ablation of the ovary, tube or tube and ovary was performed, the patients varied in age from thirty-seven to fifty-six years.

f. If the tube be the seat of hydro-salpinx or of pyo-salpinx, or the ovary the seat of atrophic, cystic or neoplastic disease. Case 26, a fifty-six year old patient had a femoral ovarian hernia containing omentum and a follicular ovarian cyst five inches in length. In case 30, the hernial sac contained a tube, an ovary and a fibroid uterus.

In every case, the reduction or removal of the hernial contents is to be followed by radical cure of the hernia. As, in the female, the inguinal canal can be completely closed, there being no need to preserve a passage as in the male, cure, in them, is usually permanent. In sixty-nine cases, it is stated that an operation for radical cure was performed. Various types of operations were employed: Andrews' imbrication method (43), Bassini method (2), Kocher's (26), etc. Case 52, a sixty-two year old patient suffering from a strangulated ovarian hernia, having as associated contents omentum and transverse colon, was in extremis when operated upon. The ovary was removed and the sphacelous intestine was fixed to the operative wound; a fecal fistula developed. Three weeks later, resection of the intestine was performed and the divided gut ends were united end-to-end by a Murphy button. One month later the patient left the hospital cured of the hernia and of the fecal fistula. In eight cases, 1, 4, 13, 17, 34, 40, 53, 58), the operative procedure is not definitely described. Though operation was often performed in an inflamed field as in the

(Concluded on page 185)

On Living Longer

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The plan of our life as ordained by nature calls for development from a minute cell or unit of living matter to the aggregation of differentiated, coordinated biological units that constitutes our body in its prime, and then for retrogression, degeneration, and finally complete disintegration of our body. There is no such thing as life without end of our body as a coordinated whole or of its individual components, except in the modified form provided by the scheme of reproduction. The limit of our days is set.

But is that limit so definitely fixed as to be beyond our control? Can we extend it by our own activities or precautions which we take?

The answer to these questions would seem to be favorable to the thesis that we have it in our power to increase our expectation of life.

Some factors which we cannot control directly, as heredity and accidents, we can modify to a certain extent. The bad effects of heredity of constitutional weakness or susceptibility to particular diseases greater than the average, can at least be lessened by special procedures or ways of living; and the hazard of lightning striking us, or a railway collision mangling us, or appendicitis happening to us, or an epidemic of influenza including us among its victims, can be reduced to a minimum by proper precautions. And besides acting so as to offset any handicap of heredity and to minimize accidents, we can in general lengthen our life by observing the rules of health; for the whole matter is one of hygiene: to live long means to keep healthy.

I have referred to making the best of a bad heredity, if such exists. Of course some hereditarily handicapped individuals are doomed, as certain cases of insanity and hereditary syphilis; but many with apparently heavy handicaps, and very many with light ones, can be salvaged. History is full of examples of born weaklings who became strong. Theodore Roosevelt was sickly in early life, but by hygienic living overcame this handicap. Had he observed the laws of health even more closely than he did he might have lived even longer than he did.

Among the common hereditary factors making against health and long life are those found in a history of certain diseases occurring in near relatives, especially ancestors; as heart disease, apoplexy, Bright's disease, gout, diabetes, obesity or tuberculosis. Such a family history calls for early adoption of a safeguarding regimen.

Factors making against health and longevity not less real than those just mentioned, although not so obvious or easily demonstrable, are hereditary tendencies, inclinations or tastes which lead to unhealthy modes of life. An inherited inclination to gamble, for instance, may make for late hours and other unhygienic things. An inherited taste for unwholesome foods or for excessive eating or excessive indulgence in alcoholics, may make for disease. These inherited tendencies may have a basis in abnormal conditions of the nervous system. They call for special ways of living: those whose forbears indulged wrongly or too much need to restrict themselves more than is required of the average person.

Physical and mental environment and occupation may be factors opposed to health. Many a man invites disease and an early death by working in a city office who might enjoy health and a long life on a farm. A man whose forbears for several generations worked with their nervous systems mostly and with their muscular systems very little, if he becomes a mind worker, should take long vacations or devote much time to golf, besides adopting a regimen otherwise suitable to his case, if he would escape the penalty which nature exacts from those who deviate too far from her regular developmental lines. I know a man now nearing fifty whose father, grandfather and greatgrandfather were professional men, who himself started in the practice of law in the city, but soon found that continuance in his profession threatened physical breakdown: he became a farmer, not giving up entirely intellectual pursuits, and enjoys robust health.

The city life in itself is an unhygienic factor. Man is naturally a country animal, and in no case removed by more than a few generations from the country life, and not far removed, biologically speaking, from the savage life. He has not had a sufficient time to adapt his organism to the city environment. The nervous strain imposed by the large amount of noise and the necessity for watching out while travelling around in the city, requires special regulation of life to offset its effects. Impure air and sedentary occupations make more difficult the work of living. It is safe to say that more sleep and less food figure prominently in the health rules for city dwellers.

Warnings to modify existing ways of life may come from previous diseases which have been more or less recovered from. After recovery from an active pulmonary tuberculosis residence in a different climate may be desirable. After apparent recovery from chronic catarrh of the bowel long continued special dietetic regulation may be necessary as a safeguard. After an attack of neurasthenia due to overwork or toxemia or both, modification of activities may be called for. I know a surgeon who achieved success and fame by middle life and then suffered a nervous breakdown, which received special significance from his family history: he retired to the country and became a successful farmer, and is now entering on a healthy old age.

A celebrated example of salvage after physical breakdown is recorded in the history of Luigi Cornaro. Cornaro was born about 1466, of a noble Venetian family. In consequence of his irregular life, and especially his intemperance in eating and drinking, he became so much broken in health by the time he was forty, that his physicians gave him only a few months to live if he continued as he was going. They told him his only hope lay in adopting a "sober and regular life." They did not give him the details, but as he was anxious to live, he worked them out for himself. In particular he worked out for himself a special diet, the main feature of which was its extreme meagerness: it consisted of the smallest amounts that would keep him alive of the foods that best agreed with him. He recovered his health in a year on this regimen, and concluding that if it could cure him when he was sick, it would be good

for him when he was well, he adhered to it for the rest of his life. He lived to be over one hundred years of age and enjoyed continued good health of mind and body, and published in his ninth and tenth decades the book which made him so well known.

The great guiding principle in the matter of keeping healthy and living as long as possible would seem to be moderation, avoidance of excesses. Scientists have seen, philosophers have appreciated, poets have sung the merits of moderation, but civilization has not encouraged it. Civilization is continually inviting the spur to make it advance faster. The human organism has difficulty in making the necessary adjustments for keeping up with this rapid advance of civilization. Nature's plan provides for adaptation to changed conditions of life, but nature has prescribed that the pace at which this adaptation moves to its accomplishment shall be a slow one. Conditions of life have changed more in the last hundred or the last fifty years than in the preceding five hundred or thousand years. Every new conquest of the forces of nature, every new revelation of its mysteries makes such further conquests and revelations easier. The conveniences and opportunities and complexities of civilized life are increasing in a geometric ratio, but nature's speed rate of adaptation cannot be so increased. Biologic laws are fixed. Medical science has helped to relieve the strain but could not relieve it completely. The practical science of medicine has advanced along with civilization, and especially has made enormous improvements in our methods of fighting our hereditary enemies, the disease producing microorganisms, but it has not succeeded in preventing a great increase in those disease conditions which result from or are predisposed to by overstraining of the organism. Diseases of the heart, arteries and kidneys, diseases of the nervous system, and cancer, are increasingly prevalent. The automobile, the aeroplane, the telephone, the radio, the enormous increase in facilities for travel and commerce and communication of ideas; the marvellous advances in chemistry and physics which, among other things, has made war destructive beyond previous conception; the rapid increase in the population of the world without a corresponding development of applied political and social science adequate to regulate social life—all these things threaten the destruction of the human race unless the principle of moderation can be effectively invoked. The pace of our present civilization is the pace that kills. Balzac says "there are two ways by which we exhaust the springs of life, by willing and by having our will." The will to be rich, powerful, famous, to do a difficult thing, may drive us to exceed our speed limit; and if we succeed in accomplishing what we willed, too often the success is at the cost of a broken down body.

Moses wishing to make his people obey his health rules put those rules into their religion. Perhaps in the religion of the future Hygeia will once more have a divine sanction. Certainly the "unending purpose" that runs through the ages requires that we be as healthy and live as long as possible.

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An Expansion of Service

United States Public Health Service Hospitals may hereafter be used for admission of ex-members of the military and naval forces of allied nations, for examination or treatment, whenever considered necessary, in common with other beneficiaries of the U. S. Veterans' Bureau. Such admissions will be made only upon proper authority.

Lead Poisoning Data

The statistics secured from industrial accident boards are incomplete from all except a few States. In Massachusetts, 414 cases of chronic lead poisoning with 4 deaths were reported for the 5 years, 1921-1925; in New York, 707 cases were reported from 1912 to January, 1925, of which 285 were among painters and 228 among storage-battery workers; and in California there were 487 cases during 1924 and the first six months of 1925, 338 of which were caused by the inhalation of fumes in burning paint from discarded battleships. In New York, from which the most detailed report has been received, a marked reduction in the number of cases had taken place since 1917, the peak year of the period.

Federalized Physiotherapy

At the present time the Public Health Service is utilizing 33 physiotherapy aides in 18 hospitals. The Public Health service would not think of trying to operate a hospital without a physiotherapy department. Its value has been amply demonstrated.

These aides in Public Health Service hospitals have the same rank and pay as the nurses, and their duties, as described by the Civil Service through whom these professional workers are obtained, are as follows:

The duties of physiotherapy aides consist of administering physiotherapy in its several branches—massage, electrotherapy, hydrotherapy, mechanotherapy, thermotherapy; active, passive, resistive, and assistance exercises and remedial gymnastics; keeping daily record of the work and progress of each and every patient coming under direction and treatment and making the required reports of the activities of the reconstruction work in physiotherapy.

Inguinal, Femoral Herniae

(Concluded from page 183)

cases of strangulation and also in those of torsion, the use of drainage is reported in only one case (5).

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Some Notes on the Heart for the General Practitioner

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PART I.

For the detection of cardio-vascular defects an understanding of the more modern views of diseases of this system is necessary. Thirty years ago, our instruction as a student was largely limited to a study of valvular conditions. Blood pressure and conduction defects were in the embryonic stages. Within recent years, diseases of the circulatory system have undergone an intensive study and as a result, new ideas and terms have been introduced and the meaning of the old ones has been modified.

The introduction of such instruments as the electrocardiograph, the polygraph, etc., has caused the production of a large and technical literature. As a result, in a cardio-vascular examination, one is faced with the problem of choosing from this mass of knowledge, a working routine which will include and make use of the more important points. In an attempt to do this, the following notes have been prepared in the hope that they may be of value to the general practitioner in his daily work.

Certainly, no organ in the human body is so interesting as the heart and a knowledge of it so valuable. It is obvious that, for a clear understanding of the cardio-vascular system, a general knowledge of its anatomy, embryology, and the normal and pathological physiology is necessary.

Just a word as to the evolution of the heart. In its most primitive form, the vertebrate heart is composed of a simple tube in which a contraction starts at the venous end and is propagated in a wave like manner along the tube to the arterial end. In the higher vertebrates, the heart at its first appearance, has the same tubular form; then the simple tube very rapidly becomes modified, partly by twisting upon itself, partly by the outgrowth of the dorsal or the ventral wall of the tube to form the cavities of the auricle and the ventricle.

The heart is seen in a very simple form in fishes, where it consists of one auricle and one ventricle. In amphibia, such as the frog, the heart consists of two auricles and one ventricle, while in birds and mammals the heart has become entirely divided into two halves, right and left, which do not communicate with each other except by way of the blood vessels and capillaries.

Now the chief characteristic of the embryonic human heart is a fifth chamber, the sinus venosus, which is formed from the right and left ducts of Cuvier. With a correct understanding of this, we are enabled to explain the mechanism of some of the disorders of the heart beat. A knowledge of this is important. In all of the lower vertebrates the contraction wave starts at the sinus venosus while in the adult human heart the contraction starts at the sino auricular node.

In the course of development, the sinus venosus becomes incorporated in the auricular wall at the termination of the superior and inferior vena cava, where it exists as a specialized bundle of neuro-muscular tissue, known as the sino auricular node. The rest of the primitive cardiac tube has become incorporated in the heart muscle where it acts as a conducting system between the Sino Auriculo Node and the different cavities of the heart. More primitive tissue of the neuro muscular type is found at the Auriculo Ventricular Node, at the base of the auricular septum on right side, below and to the right of the opening of the coronary sinus.

Having digested so much, we are now ready to better appreciate the conducting system of the heart and a reference to the diagram will fix it better in mind.

As we have stated above, normal impulses to contraction are initiated by the "pacemaker" of the heart, the Sino Auricular Node, which is located in the right auricle at the junction of the superior vena cava. From here the impulse spreads over both auricles, arriving by the shortest route at the Auricular Ventricular Node, between the auricles and the ventricles. (Node of Tawara) This in turn, becomes activated and sends an impulse on to the ventricles through the Bundle of His. A branch of this Bundle of His goes to each ventricle and subdivisions provide for the spread of the impulse simultaneously to all parts of both ventricles.

The stimulus is carried along by an intricate system of arborizations which extend to the muscular mass of the ventricles and terminate in the Cells of Purkinje, where the stimulus conduction is especially well developed. The activity of the Sino Auricular Node is controlled to a great extent by the inhibitory action of the Vagus nerve and the accelerator effect of the Sympathetic.

It is essential to bear in mind that the heart is normally excited to contraction by impulses arising from the Sino Auricular Node. As a result of the passage of this excitation wave over the heart, both auricles contract simultaneously, and the contraction of both auricles is followed after a short pause, by the simultaneous contraction of both ventricles.

This is the mechanism of the heart beat and the spread of this contraction wave or impulse is recorded by the electrocardiograph.

The newer cardiology classifies these cardiac rhythms and arrhythmias and this classification is based on the Point of Origin of the impulse for the contraction. These four origins are first, those arising from the Sino Auricular Node; second, those arising from within the auricular muscle; third, those arising from the Bundle of His or the Auricular Ventricular Node and last, those arising from within the Ventricular muscle.

Disturbances of conduction of the excitation wave are typed as Auriculo Ventricular Heart Block, Intra Ventricular Heart Block and Sino Auricular Block.

Space will not allow a full consideration of all of the disturbances of the rate and rhythm of the heart. But it is important that the rate should be determined, not only at the pulse but also over the heart itself, because in certain arrhythmias, notably auricular fibrillation, the ventricular rate differs from the radial pulse rate. From a consideration of the pulse alone we can roughly divide cases into those showing a normal rate, those showing a tachycardia and those showing a bradycardia. A rate below 60 per minute may be considered a bradycardia and a rate above 100 a tachycardia.

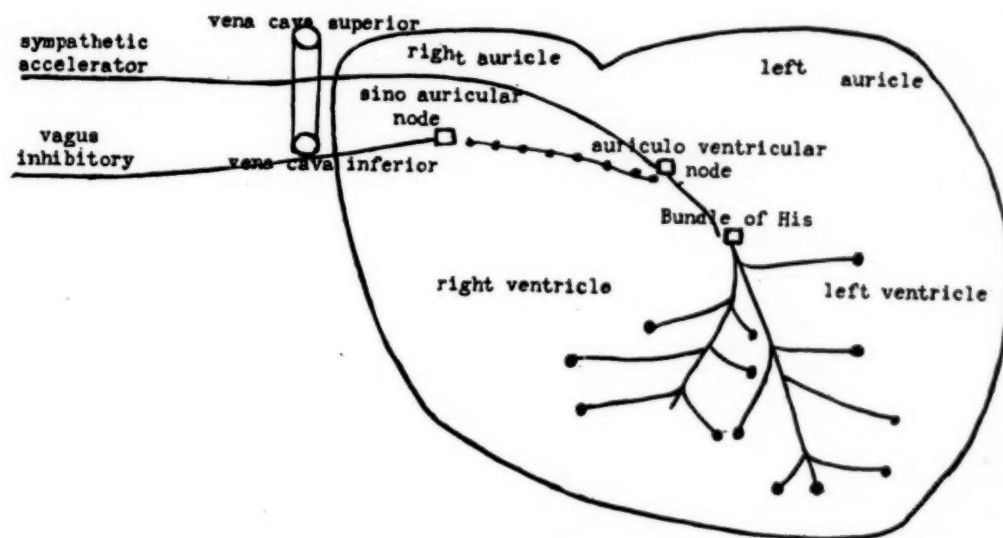
This is where the use of the electrocardiograph in clinical medicine has made a definite advance in the study of abnormal rhythms of the heart. The various disorders can be recognized clearly and unmistakably.

The most important types of disorders of the heart beat are as follows:

Sinus Arrhythmia, Premature Contractions, Paroxysmal Tachycardia, Auricular Flutter, Auricular Fibrillation, Heart Block and Pulsus Alternans.

Sinus Arrhythmia is a common type of irregular heart action in children and is a normal phenomena. It is brought about by alterations in the vagal tone and is characterized by the fact that the heart accelerates on inspiration and slows on expiration, usually disappearing when the breath is held or when the heart's rate is increased by exercise.

Premature Contractions, or extra systoles, are abnormal contractions of the heart which spring from some abnormal focus in the heart, either from the auricular or ventricular muscle. Without the electrocardiograph it is generally impossible to differentiate auricular and ventricular premature beats, but for clinical purposes this is seldom necessary. Subjective symptoms are often noticed by the patient who says that his heart "skips" or "turns over." Palpation of the radial pulse will show a normal rhythm with an occasional intermitance or feeble premature beat followed by a pause. These can be identified as due to premature beats by noting the pulse intermitance or premature beat at the wrist is associated with a premature ventricular beat.



Premature beats may be due to a variety of causes but in a large number of cases no evidence of heart disease can be found. They often disappear when the heart's rate is raised by exercise but when the heart's rate is so increased and the number of premature beats increases, it is quite certain that we are dealing with an expression of myocardial damage. In such cases we find other evidence of heart disease. The consensus of opinion at the present time is that the extra systole may be neglected in prognosis if no further signs or symptoms of heart disease can be found.

Paroxysmal Tachycardia. In this condition we have an abnormal heart rhythm caused by a regular and rapid succession of premature beats which may arise from the auricles, junctional tissue or ventricles. In this condition we find the ventricular rate around 180 beats per minute, regular and is not altered by change of position, exercise or rest. The onset and offset of the attack is sudden and is generally recognized by the patient. This is one of the few conditions where we may find an acute dilatation of the heart.

Auricular Flutter. This condition is due to a rapid and regular circulating wave in the auricle, the circuit being completed at a rate of about 300 per minute (the circus movement). It is the mechanism of not only flutter

but also of fibrillation of the auricles. In flutter, the path taken by the circulating wave is regular while in fibrillation the path is irregular. This usually results in a block between the auricles and the ventricles. Flutter is usually persistent, is associated with advancing years and is probably always associated with myocardial change.

Auricular Fibrillation is a condition where the normal auricular contractions are replaced by fibrillary twitchings; the result of a continuous circulating wave which travels along sinuous and varying paths, or entering fibers through which it has already passed. So in this condition we find the auricles contracting in a tremulous and inefficient manner at a rate of about 450 per minute. As the conducting system is not able to transmit this number of impulses to the ventricles, the ventricular rate becomes irregular and is about 120 per minute. This irregular action of the ventricles produces a totally irregular pulse. There is frequently a marked discrepancy between the number of ventricular contractions and the number of pulse waves which are felt at the wrist. This

is termed Pulsus Deficit.

Auricular fibrillation is a most common cause of cardiac failure of the congestive type. It may often be recognized clinically by the rapidity of the heart's action and its total irregularity in time and force.

Heart Block usually results where disturbances in conductivity take place between the auricles and ventricles. When the heart rate is below 60 beats per minute partial heart block may be suspected and is almost certainly present when the rate is below 40 beats per minute. The rate is not affected by posture or exercise and is quite regular. Notice the jugular vein pulsations. If you see three or four waves to one ventricular contraction you may be suspicious of heart block.

Pulsus Alternans is a condition where the alternate beats in an artery are unequal in force and volume. It can rarely be diagnosed by palpation of the radial artery but can often be detected when taking the blood pressure. At the top range of blood pressure the pulse rate will be seen to be just one-half of what it is at a range a few millimeters lower. It indicates a failing contractility on the part of the ventricles and occurs commonly in cardiac failure, particularly in association with myocardial disease and hypertension.

With a working knowledge of this brief outline one should have a competent viewpoint of the conduction disturbance of the heart.

PART 2

Let us now consider a definite plan by which an examination of the cardio vascular system may be carried out. The most common method was that of inspection, palpation, percussion and auscultation. While these methods have their value, the following outline is to be preferred.

First, the etiology, then the signs and symptoms of cardiac failure, the signs of enlargement of the heart, the signs of valvular disease, the determination of the heart's rate and rhythm, the signs of infection in heart disease and finally, the condition of the vessels.

We have already considered the heart's rate and rhythm for the reason that the subject is not familiar with most medical men.

Etiology is important because etiology will often control the progress and treatment of heart disease. Again, the whole problem of prevention and prophylaxis centers about the etiology. The common causes of heart disease are: arterio sclerosis, rheumatic fever (including its allied affections, chorea, tonsillitis, growing pains, torticollis), hypertension, with or without renal disease, syphilis and thyroid affections. (White) We also have many cases of heart disease of unknown etiology.

The Determination of Cardiac Failure is the most important point in any cardio-vascular examination. This is so because treatment must be directed to the heart muscle and not to the structural disease of the valves. Weakness of the heart muscle is due to disease of the muscle and added embarrassment of the muscle may be brought about by damaged valves or abnormal rhythms such as fibrillation of the auricles.

Cardiac Failure exhibits itself in two main types: Cardiac Failure of the Congestive Type (so called decompensation) and Cardiac Failure of the Anginal Type (including Angina Pectoris). What is the amount of work the patient can do before distress is produced? Put him through an exercise test. In Cardiac Failure of the Congestive Type, we find breathlessness on exertion, and in advanced cases, at rest. The earliest signs are engorgement of the veins of the neck and enlargement or tenderness of the liver. (Lewis) These two signs occur before the other signs, such as edema of the legs, cyanosis, ascites, crepitation over lung bases and general anasarca.

In Cardiac Failure of the Anginal Type the chief and sometimes only evidence is pain. The pain may be mild or severe and the grave type of a cardiac pain is commonly called Angina Pectoris. This, however, is a symptom and not a disease. It is better to consider the anginal type of pain as an expression of failure on the part of the heart muscle. The common pathological conditions found in this type are coronary artery sclerosis, thrombosis, and aortitis (particularly syphilitic).

Lewis, of England, does not attempt to differentiate clinically between hypertrophy and dilatation in chronic heart disease. He thinks that in all cases where the heart is permanently enlarged, that hypertrophy and dilatation are coexistent and that it is not possible or necessary to estimate the relative degrees of muscular growth and stretching in the living man.

The chief means of judging the size of the heart is determined by the position of the Apex Beat by Palpation. It is of much more value than percussion in determining the left border of the heart. Percussion of the area of cardiac dulness is a very inaccurate procedure

and must be recognized as such in the cardio-vascular examination. However, for practical clinical purposes, enlargement of the heart may be taken as evidence of myocardial disease. It goes with cardiac weakness.

Lewis also states that we may assume myocardial disease to be present (as we have no characteristic signs or symptoms of myocardial disease) if we have enlargement of the heart, free aortic regurgitation, developed mitral stenosis, aneurysm, chronic renal disease, fibrillation or flutter of the auricles, heart block or pulsus alternans.

Signs of Valvular Disease. Cardiac murmurs may be caused by structural change in the valves, the result of disease (which we call organic murmurs), or may often occur in hearts with perfectly normal valves (which we call functional murmurs).

Functional murmurs are very frequent; they are always systolic in time, are soft and blowing in character and do not replace the first sound.

It is a general rule that very little importance is attached to any systolic murmur at base or apex in the diagnosis of chronic valvular heart disease. They are usually functional in character.

The most common Systolic Murmurs are the pulmonic systolic, the apical systolic murmurs which include the cardio-respiratory murmur, the postural systolic murmurs (often present after exercise) and the systolic murmur or relative insufficiency (caused by dilatation of a valvular orifice).

No definite relation exists between the loudness of the murmur and the seriousness of the lesion. Then we have the systolic murmur of mitral regurgitation, the aortic systolic murmur (this can be disregarded in young adults in the absence of enlargement and basal systolic thrills) and the tricuspid systolic murmur which rarely indicates tricuspid disease.

From the character of the murmur itself, one cannot differentiate between a lax ring and a damaged valve, The systolic murmur at the apex means little.

The only sure indication of disease of the mitral valve is the Diastolic Murmur of mitral stenosis.

However, in children with a rheumatic history, an enlarged heart and the systolic murmur, one is reasonably safe in making a diagnosis of mitral disease, the diagnosis being made more on the history and cardiac enlargement than on the murmur itself.

The importance of valvular heart disease from a prognostic standpoint has been overestimated. The prognosis is not arrived at by counting the murmurs but by a knowledge of the condition of the myocardium. And we get this knowledge from a consideration of the patient's response to effort and by the signs and symptoms of cardiac failure.

In mitral valve disease the etiological factor is the rheumatic virus. Syphilis and arterio sclerosis rarely attack this valve. If we have a rheumatic history, an enlarged heart, a loud blowing or rough systolic murmur best heard at the apex, transmitted to the axilla, we have very good evidence of mitral valve disease associated with regurgitation.

It is very difficult to differentiate organic mitral regurgitation, the result of disease of the mitral valve, from a relative mitral insufficiency, the result of dilatation of the ventricular cavity. But if we can demonstrate mitral stenosis, we have clear evidence of disease of the mitral valve. The diagnostic signs of Mitral Stenosis are: a rumbling diastolic murmur heard best at the apex and a diastolic thrill at the apical region. The signs of mitral stenosis may be taken as fairly good evidence of myocardial disease because the heart muscle is usually in-

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NEW YORK, AUGUST, 1927

John G. Williams, M.D.

It is our painful duty to record the death of Dr. John G. Williams, which occurred a few days after the receipt by the MEDICAL TIMES of his last paper, written in collaboration with Dr. Francis W. Currin. This paper appears in the present issue.

Dr. Williams died on the second day of July, of a cardiac ailment of long duration. He was fifty-four years of age and is survived by his wife, Mrs. Angela Sause Williams, and a daughter, Angela.

Born in Branford, Connecticut, Dr. Williams was graduated from the Yale Medical School in 1900 and served an internship at Saint Mary's Hospital, Brooklyn. Ever since then he had been an active staff member, serving as roentgenologist and as President of the Medical Board of the hospital. At various times he served as roentgenologist of the Swedish, Saint Charles, Saint Catherine's and the Holy Family Hospitals. He was also consulting roentgenologist at the Brooklyn Hospital. He had been the senior censor of the Medical Society of the County of Kings and also a member of its Council. He was a former President of the New York Roentgen Ray Society, and a member of the Radiological Society of America and of the American Roentgen Ray Society.

It was as a pioneer in the use of radium and deep x-ray therapy that Dr. Williams chiefly distinguished himself, establishing and himself equipping and financing the first clinic in Brooklyn for the latter type of treatment. His writings measurably advanced this phase of therapy. Like other pioneers in roentgenology, he suffered severe injuries twenty years ago, and so be-

longed to that band through whose personal sacrifices so much has been won for science and the sick.

The profession will feel Dr. Williams' loss most keenly, not only because of his scientific judgments, now no longer available to the colleagues who have for so long depended upon him, but also because of the deep friendships that he quietly evoked and nurtured.

Despite Dr. Williams' high attainments he was the most unpretentious of men, which accounted largely for the peculiar regard in which he was held in professional circles.

Preventive Dentistry in Children: The Forsyth Plan

After ten years of intensive work in preventive dentistry, on a large scale, at the Forsyth Dental Infirmary for Children in Boston, Cross and his associates have demonstrated that when children in the eighth and ninth grades have received treatment after the Forsyth plan in the first, second and third grades, 82 per cent of them will have four first permanent molars in good condition.

Such a brilliant result is cited as a proof of what can be done to guarantee the integrity of a great health fundamental—sound, properly occluding and efficient teeth.

The Forsyth plan aims to begin supervision of the children's teeth before they are born, that is to say, the mothers' mineral metabolism and endocrine welfare are safeguarded during pregnancy and their teeth taken care of in order effectually to control one major source of toxicity. Then, after birth, appropriate medical attention from a nutritional standpoint is given and endocrine deficiencies and deleterious habits and defects corrected. Finally, routine filling of fissures and pits as they appear, before cavities can occur, in both primary and secondary teeth, is practiced, together with systematic cleaning.

This work represents an ideal of health service—the laying of one of the indispensable foundations for lifetimes of health and vigor. It ought to appeal with the greatest force to the medical profession.

It is in childhood that the periodical examination should be initiated; then the periodical examination of the adult will not find him so often devoid of the first "permanent" (almost never permanent!) molars, not to speak of other important parts of the masticatory mechanism.

The sincerity of our present crusade for preventive medicine and the effectiveness of our methods will be easily gauged by our professional posterity of the next generation; for the teeth of the young adults who are now in our care will then have become either a glorious or a shameful exhibit.

The Forsyth program is a perfect illustration of what a sane *rapprochement* between the dentist and the doctor, after the fashion advocated by the Carnegie Foundation in its recent bulletin entitled "Dental Education in the United States," will always accomplish.

The oral specialty of medicine comes into its full dignity when it swings into line with other great public health movements, such as those against tuberculosis, heart disease and cancer, bringing into the Armageddon for prevention a contribution as significant as any of its allies and giving to modern pediatrics in particular a new rationalization, a new glamour, a new hope.

Faulty Extremes in Practice

Stafford McLean and Helen L. Fales, in their fine work, *Scientific Nutrition in Infancy and Early Childhood*, make the point that hypodermoclysis is probably used too frequently in hospitals and not frequently

enough in the home. In the hospital, they say, the apparatus and the fluid are always in readiness and there is a tendency to give clyses when sufficient fluids might be given by mouth. There is in addition the danger of continuing the use of clyses to the point of tissue saturation. In the home, these authors continue, there is a tendency to be satisfied with inadequate fluid intake until the patient's condition is such that hospitalization becomes an urgent measure. Clyses can be used at the bedside with the same facility as in the hospital if practitioners will free themselves from the idea that it is exclusively a hospital procedure. At the same time, it is to be remembered that while hypodermoclysis of normal saline or 3 per cent glucose solution is almost a routine therapy for dehydration, it is inferior to the ingestion of water by mouth when the latter measure is practicable. There should be an approach to a happier mean in both hospital and private practice.

World Population

According to Professor A. E. Ross of the University of Wisconsin the population of the world one hundred years from now will be 60,800,000,000, provided birth and death rates do not change. This would be thirty-two times the present estimated population of the globe. Professor Ross estimates the present world death rate at 15 per 1,000, and the birth rate at 45 per 1,000. The population has doubled in the last ninety years. The colored races number 70 per cent of the total.

If awakening nations like China continue to maintain high birth rates, while the white races apply increasingly intensive birth control, some interesting social changes are bound to take place in the course of time—and not such a long time either.

Of course, the population of the globe is not going to increase thirty-two times in a hundred years, but it is going to increase a great deal, and then the struggle to possess and dominate the globe will wax keener.

Edna Ferber's vision, whimsically elaborated in her Yale address, of how governmental food control will ultimately affect the lives and thought of the people seems not very far fetched, as one reflects upon the foregoing considerations.

Prophecy is becoming less and less hazardous.

Metabolism and Sterility

The researches of Dr. Oscar Riddle, of the Station for Experimental Evolution, Carnegie Institution of Washington, Cold Spring Harbor, Long Island, suggest a subtle and hitherto unsuspected relationship between metabolism and the sex functions. His findings tend to show that slowing the metabolism of the male favors the development of femaleness, while speeding up the metabolism of the female favors the development of maleness. Along with these changes come rather definite effects upon the number and sex of offspring. The possibility of sex control in the progeny looms rather imminently, it would seem, with some chance of application in human beings.

In so far as the rate of metabolism in the female is raised and sustained at or near the normal masculine level there appears to be a decided increase in female sterility. Riddle links this up with the high degree of sterility in college women not to be accounted for on conventional grounds, particularly in college women who have gone in intensively for athletics, which of course makes for a great rise in metabolism. He thinks that future generations will take serious account of the facts that are now being slowly evolved in the experimental laboratory.

A Warning

Masser reminds us, in the London *Lancet*, that in reducing obesity we not infrequently change the nature of people in an undesirable way; that is to say, previously contented, cheerful and placid individuals sometimes, as they lessen in weight, increase in irritability, sullenness and ill temper. Masser makes the point that with moderate reduction in weight in cases where obesity has been marked, activity of both mind and body is usually increased and cheerful temperament not affected, but if the reduction is carried too far, pronounced lassitude with nervous irritability occurs.

These undesirable changes are not so evident to the physician as they are to those who have to live with the grouchy one.

We should say that reduction should always stop upon the appearance of such changes in disposition—preferably before they appear.

The rate of reduction must be considered in this connection; too rapid reduction will occasion irritability before a point is reached that an easy pace would make attainable.

Miscellany

Machinery of the Clinic

BY DR. WILLIAM BRADY
(in the *Brooklyn Eagle*)

Although we Americans worship the god of machinery and mass production, when we wish to build a doorstep, a cottage or a garage we generally prefer an individual builder. Standardized houses are admirable and economical and apparently quite satisfactory for other people; for ourselves we like something different.

These are days of specialism, machine specialism, in medicine.

The best minds have their limitations. No one doctor knows it all. The very vastitude of medical science awes the student, and the true physician is a student throughout his professional life. In medicine it is certainly true that he serves best who studies most. This does not refer to material success in the popular sense.

Medical science is as exact as any living, universal, humane science can be, and yet no one physician or specialist knows it all. Everybody admits this, especially the physician or specialist. This is the reason for specialism, legitimate specialism. The doctor having studied general medicine and surgery, earned his degree, obtained his license and engaged in general practice for a term of years, finds himself particularly interested or maybe successful in some one branch of practice. He decides, therefore, to devote all his study and time to that branch. He announces to his medical colleagues that he is limiting his practice to his chosen field, and this constitutes him a specialist. His license from the State authorizes him to practice either general medicine or surgery or any special branch he prefers. As a rule, he does pursue post-graduate study of the technical side of his work, but this is entirely up to the specialist himself.

Owing to the higher esteem people have for the skill and education of the specialist and consequently the greater emoluments to be gained via specialism, there is an increasing tendency toward and fondness for special practice among the younger physicians, and considering the difficulties, annoyances and veritable insults which the people place in the way of the qualified medical practitioner nowadays, we cannot wonder that most

young doctors yearn to be specialists and few volunteer to serve as lowly general practitioners. If I were beginning over again today I'd rather go to work—and heaven knows how I hate work—than be a general practitioner. But no fear, I'd get around the problem by becoming a specialist first crack out of the box.

The young, inexperienced physician launching into his specialty naturally feels insecure. He knows he is not properly qualified by general practice to apply sound judgment in his special field. He is conscious of his narrow view. Therefore, he considers how to avail himself of the wisdom of experience without having had the experience, and he hits upon a very good scheme, an arrangement by which he practically has the guidance of a good family physician in his office all the time. He effects a partnership or a union of one kind or another with a group of other specialists. They pool the overhead, aid and abet each other and presently have a smoothly working machine in operation which keeps many a patient from falling into the "ordinary" physician's hands. And the patients like it.

Hand in hand with this modern machine method goes a tendency to submerge the personal or individual character or even identity of the physician or specialist himself and practice under some impersonal title, such as the Squedunk clinic. Until this commercial evil broke out, it had been only the quack who preferred to conceal his own identity and practice under some imposing name like International Specialists.

No matter whether you call it a clinic, a group, an institute, a hospital, an aggregation, a clique, if you seek honest diagnosis, sound advice and skilful treatment, remember, the practice of medicine is a personal service. Do not be dazzled by impressive trappings or deceived by tricks of the trade.

Medicinal Whisky

An Interesting Letter

To the New York *Herald Tribune*:

At the recent convention of medical men in Washington it was decided that the American Medical Association should sponsor legislation allowing the physician to be the sole judge of the quantity of whisky required by his patient as well as of the frequency of the dose. Much criticism was leveled at Congress on account of the law limiting the quantity of this beverage that a physician may prescribe.

There is no question that Congress may legislate on the so-called medicinal whisky with the same propriety as it legislates on any other technical subject. The medical profession is not immune from legislation, and Congress has the right to enact laws with respect to any of the sciences without on that account being sneered at. It is not usurping the functions of the physician when it passes a law regulating the sale of so-called medicinal whisky. The Constitution provides no immunity for any class of people or of merchandise which places it above the law.

It is to be assumed that in legislating on technical subjects Congress will be guided by the opinions of technical men, and when these differ on a technical question it will decide between the two opinions. Half or nearly half of the doctors have declared that whisky has no therapeutic value, but Congress has made a concession to those who are of a contrary opinion and has provided a law whereby whisky may be sold, under restrictions, for medicinal use. This is in opposition to the policy of many states whose legislatures have prohibited the sale of whisky for any purpose whatever.

Do the physicians who are clamoring for more whisky

want it for sick people or for people who only think they are sick—for people who are dying of thirst and those who are made ill at the thought of prohibition?

Of course, one need not indict the whole profession. Many are persuaded through sheer good nature. Many would refuse it no matter how valued the patient may be or how influential the friend. It depends on the personal viewpoint. A dry physician will act differently from one that is wet. Many have failed to take out permits only to avoid pestiferous friends and patients.

It would seem that it is in the interest of the honest physician who has a regard for the reputation of his profession that the sale of an article like whisky for medicinal purposes should be carefully safeguarded so as to prevent abuses by a large number of physicians, wet at heart and bitterly opposed to prohibition, who would consider it a very minor peccadillo to issue a whisky prescription to a good friend on the way to the golf course or to a house party. One may safely say that there is not a man-about-town who has not on his staff one or more friendly physicians who would consider themselves poor sports if they should deny him so simple a gesture of friendship.

Congress has a habit of scenting abuses. It is an adept at plugging holes—loopholes through which those who would evade the law find an easy avenue of escape. To allow a certain type of physicians to issue as many prescriptions and for as much whisky as they desire would be nothing less than an invitation to a bootlegging carnival. If the wets could bring this about, there would be no need to campaign either for a modification of the law or the repeal of the amendment. Prohibition automatically would come to an end.

The Supreme Court has laid down the principle that if, in order to enforce the prohibition against alcohol for beverage purposes, it becomes necessary in the opinion of Congress to restrict or prohibit the sale of another article not included in the prohibitions of the Eighteenth Amendment it has power to pass such a law. The statute does not overstep the powers granted by the amendment. Anything that Congress may consider necessary may be done in order to enforce the Constitution. There is no limit to its power in this respect so long as it keeps within the Constitution in other respects.

This has a bearing also on the much discussed one-half of one per cent provision of the national prohibition act. If, in order to enforce the prohibition against intoxicating beverages, Congress deems it necessary to prohibit the sale of a non-intoxicating beverage, it may do so. This rule was laid down when the right of one of the Southern states to prohibit the sale of near beer, under a constitutional amendment that prohibited the sale only of intoxicating beverages, was legally contested. It is an implied power, but it is a power, nevertheless, and it is well that the doctors should understand that their case is no exception to the general legislative and judicial practice with respect to prohibitory laws.

J. W. H. DE BELLEVILLE.

Port Richmond, S. I., May 20, 1927.

Notes on the Heart

(Concluded from page 188)

involved at the same time with the endocardium. Auricular fibrillation is a common development in the later stages of mitral stenosis. There are no special symptoms in mitral stenosis aside from the tendency to hemoptysis. A murmur and a thrill that are brought about by change of posture or effort are early signs of mitral stenosis. When the murmur is present at all times, standing or lying, or the thrill is felt in one or more posi-

tions, it is sound to diagnose the condition as one of developed mitral stenosis. The principal symptoms are those of cardiac failure, usually of the congestive type.

In Aortic Valve disease, the main etiological factors are syphilis, rheumatic fever and arterio sclerosis. In childhood and young adults, rheumatic fever is the usual cause and in these cases there is generally an associated mitral disease. Pure aortic insufficiency found in middle life is usually of syphilitic origin. In aortic valve disease there are practically always myocardial changes in the heart muscle which leads to enlargement and degeneration.

The diagnostic signs of aortic regurgitation as a soft, blowing diastolic murmur at base of heart and the Corrigan pulse. In some cases, a short presystolic murmur, the Austin Flint murmur, is heard at the apex in absence of mitral valve disease. At times this murmur cannot be differentiated from mitral valve disease. Therefore, in the presence of aortic insufficiency, the added diagnosis of mitral stenosis is very difficult. The best guide is the etiology. For example, given an aortic insufficiency with a rheumatic history and signs of mitral stenosis, it is fair to assume the presence of mitral stenosis. But if the history is syphilitic with signs of mitral stenosis, it is fair to assume the mitral valve is normal and the signs can be attributed to the Austin Flint murmur. This is so because syphilis rarely attacks the mitral valve.

Aortic Stenosis is a comparatively rare lesion and when it occurs it is practically always accompanied by insufficiency. But an aortic systolic murmur, regardless of its character is not diagnostic of aortic stenosis. Most of these cases are not due to aortic stenosis but to a roughening of the intima of the aorta or to aortic dilatation. As with other valve lesions, aortic valve disease often exists without any symptoms. The main diagnostic signs of aortic stenosis are, a systolic thrill at base and signs of co-existing aortic regurgitation, especially in presence of a slow rising pulse.

Tricuspid and pulmonary valve disease and congenital defects are uncommon and will not be discussed in this paper.

The signs of infection in heart disease should include a search for evidence of endocarditis, pericarditis and focal infections.

Endocarditis produces an inflammatory reaction of the endocardium of the valves, and later, during the process of healing, fibrosis takes place, ending in contraction, adhesions and in some cases, calcification. As a result of these changes, the valves often become deformed to such an extent that their orifices no longer close perfectly or open so as to allow a free passage of the blood. The former produces an insufficiency, the later a stenosis, and if the damage is extensive, both insufficiency and stenosis take place.

It would lead to a more clear meaning if one would remember that there is but one disease process at a valvular orifice and that the terms insufficiency and stenosis are but descriptive events that occur at these diseased orifices. With this fact in mind it will be easier to conceive of insufficiency due to disease as an early process and stenosis as a later process.

As a result of endocarditis at the mitral valve the process of healing and repair causes a defect of the valve which produces insufficiency of the valve. (Mitral Insufficiency.) Later contraction and adhesion of the valve cups causes a narrowing of the orifice which produces an obstruction to the flow of blood through it. (Mitral Stenosis.)

In the majority of cases it is impossible to say when

the endocarditis ended and the valvular disease started. The majority of cases of rheumatic endocarditis resulting in heart disease show themselves first as mitral insufficiency and later as mitral stenosis. The heart muscle is so often involved at the same time with the valves in the rheumatic process that myocardial degeneration must be suspected in all cases of valvular disease as a result of rheumatic endocarditis.

The common types of endocarditis are rheumatic, syphilitic and bacterial. Diagnosis is often difficult but the development of an arrhythmia or partial heart block in early rheumatic cases is a reliable sign that the heart muscle has been invaded.

In making an examination of the condition of the vessels, evidences of aortitis, aneurysm, hypertension, arterio sclerosis, and changes in the fundus oculi should be looked for.

36 Princeton St.

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Ano-Rectal Diseases

(Concluded from page 171)

of other specialists for its discovery. If you will merely call this condition a symptom and not a disease you will be a long way on the road to curing it. There is no royal road or short cut for the successful cure of this condition.

Do not mistake the resultant changes in the skin for the disease. Such changes only emphasize the severity of this symptom and are the result and not the cause of the disease itself. At the onset the Pruritic area is always free of any pathology.

I have had cases come to me after being treated by general practitioners and dermatologists who have not had the patients' urine examined or had a finger or proctoscope inserted into the rectum.

CONSTIPATION—This symptom is met with so often in our office that it is hardly considered of much consequence and a physician rarely refers such a patient to a rectal specialist. But no case of chronic constipation should continue to be treated for any length of time without having a proctological examination made.

There are many cases of constipation which are due to mechanical causes, such as enteroptosis, coloptosis, prolapse, invagination, stricture, hypertrophied rectal valves, hypertrophied Levator ani and anal sphincters, large internal hemorrhoids, fecal impaction, uterine displacements, etc., which require more than medication for their removal and which can only be discovered in the course of a proctological examination and routine x-ray examination; and chronic constipation warrants and deserves both of these examinations.

All painful lesions of the anal canal will cause temporary constipation by the voluntary inhibition of the act of defecation. Besides this direct inhibition the painful lesion causes a continuous spasmodic contraction. Thus an acute constipation is turned into a chronic constipation.

It has been stated that an attack of constipation in a person of regular habits has often proved to be the earliest symptom of malignancy of the rectum. Whether this is so in all such cases it is a suspicious sign and should be investigated thoroughly. Especially is this so when there is an alternation of constipation and diarrhoea in a person of cancerous age.

DIARRHOEA—As I have just stated constipation alternating with diarrhoea or chronic diarrhoea alone is a frequent sign of carcinoma.

I have in mind a recent case of a young woman thirty-nine years of age who was referred to me by a physician for a case of diarrhoea which had been treated medically over a year by two physicians without having been proctoscoped or x-rayed. Her diarrhoea came on during pregnancy and was attributed to it. When she came to me her baby was about eight months old. She looked well nourished and without a rectal examination one would never suspect that she had an inoperable cancer of the rectum with almost complete obstruction. A digital examination would have revealed her condition at once.

True diarrhoea is a rather rare symptom in disease of the rectum. The discharge is usually one containing pus, blood and mucous with fecal matter. True diarrhoea does occur in persons of a nervous temperament when they are upset by emotions of fear, fright or suspense.

Conditions which give a discharge of pus, mucous and blood usually have a diarrhoea also. These include the inflammatory and ulcerative diseases of the rectum and colon of all origins, new growths both benign and malignant, stricture, etc.

In conclusion I hope that my remarks will inspire more physicians to make regular and frequent examinations of the rectum. Your finger and two or three proctoscopes are all the instruments you require. You will be well repaid by the gratitude of your patients and the knowledge that you have not overlooked a grave condition, thereby making it graver.

312 West 76th Street, New York City.

Correspondence

Mischievous Statements Regarding Cancer

To the Editor of THE MEDICAL TIMES:

Several weeks ago the *Herald Tribune* published a dispatch from a London source quoting the statement of a physician to the effect that one hundred of the eight hundred women of the audience he addressed would be victims of cancer. This dispatch was republished with various additions and emendations in other American newspapers. Within a few weeks a Connecticut physician declared that one in ten persons in adult life would be victims of cancer.

It would be difficult to find more mischievous statements than these. Not only are they untrue in fact; they constitute a mercenary method of creating alarm. There is not the slightest doubt that the death rate of cancer is gaining. Indeed, in the quarter of a century ending 1924, the adjusted death rate from cancer has increased 44 per cent. The increase may be more apparent than real, however, for two reasons. The deaths for 1900 may have been too low owing to the fact that in later years, methods of diagnosis have been more accurate. In the second place, deaths for 1924 included those due to malignant tumors which may or may not have been cancerous. But in spite of all question in the matter, the increase in deaths from cancer, rated per hundred thousand of population, has been certain; it has been rapid; but it has not reached the rate quoted by the two physicians, nor anything near it.

The latest complete mortality statistics on the subject are published by the Bureau of the Census for the year 1924. The statistics cover a registration area having a population of 99,200,298, under-registered rather than over-estimated. In this area 91,138 deaths out of a total of 1,173,990 were due to cancer. That is, one death in every 1,088 of population or one death in every thirteen deaths is chargeable to cancer. Or, if we restrict the figures to adults thirty years of age and over, approximately one death in every ten deaths—not in every ten of adult population—is due to cancer.

Cancer is specifically an old-age ailment. Under 20 years of age the deaths therefrom are negligible—less, in fact, than 1 in 200,000 of population. Between 25 and 34 years of age the rate is 2.3 per 100,000 of population; between 35 and 44 years it is 12.0; between 45 and 54 years it is 31.3; between 55 and 64

years it is 61.7; between 65 and 74 years it is 103.8; and over 75 years it is 193.9—160.8 for men and 220.0 for women. At no period of life is the rate one in every ten of population.

The death rate from cancer is high in areas where there is a preponderance of elderly people; it is low in the frontier states where the population is composed mainly of younger people. It is higher as a rule among white than among colored people. With a few notable exceptions it is higher in northern than in southern states. The highest rate for the year 1924 was in New Hampshire; the lowest was in South Carolina. The rates were respectively 135.7 and 41.7. In Maryland the rate in 1923 was 108.3; in the adjoining state of Virginia it was 61.1. In six years the rate in Virginia has scarcely changed; in Maryland it has increased nearly 50 per cent. In Cleveland, Ohio, it was 82.4; in Columbus, a few miles away, it was 123.4; and the ratio has changed but very little in five years. In Oakland, California, a Mecca for retired elderly people, the rate was 115.8; in vigorous San Francisco, across the Bay, it was 167.4. A more striking difference occurs in the case of urban and rural communities. In the cities of the registration area the rate of 1924 was 111.7; in the rural portion it was 74.0.

There is not much to be gained in penny-dreadful figures; there will be much gained when the comparative figures noted in the preceding paragraphs are explained.

JACQUES W. REDWAY.

Meteorological Laboratory, Mount Vernon, N. Y.

The Volstead Act

To the Editor of THE MEDICAL TIMES:

Your cartoon in the July issue of the *TIMES*, prompts the following. Please give it space in your correspondence column.

Anti-prohibition propaganda has been stressing the interference of Congress with the medical profession, in placing a reasonable limit on the amount of whiskey which may be prescribed. Possibly, a few physicians may be fooled by this stuff, but not many;—probably not even the ones who are helping to pass it around. Although repeatedly solicited through circulars to do so, comparatively few physicians have even asked for a permit to prescribe whiskey; being only too glad of an excuse to separate themselves from the debasing business of signing other people's "prescriptions."

Recently, the writer was told by a physician, of an individual who makes a regular business of buying and selling prescriptions. Of another doctor, who, leaving the city where he had been located, signed up his book of prescription blanks and sold them to a local druggist. It is notorious that many hotels and clubs have their "physician."

The most effective argument against the Volstead act, is that it is being violated; and the most difficult leak to stop is illustrated by the above instances. Violation and instruction in violations, is a part of the nullifiers' campaign. Those who are making the most noise about this "interference" of Congress with a noble profession, are not sincere.

The average standing of the medical profession is high;—almost above reproach or criticism. But there is no denying that there are a few exceptions who are below standard. Records of the revenue department in the matter of narcotics, probably warrant this assertion.

It is to be regretted that so eminent a man as Dr. Wendell C. Phillips should have taken the position which he did in a recent address to the State Medical Society, without some qualifying. This speech was widely quoted by a class, not particularly interested in the practice of medicine nor in the exalted standard of medical ethics. It gave aid and comfort to the enemies of the constitution. Probably Dr. Phillips is not averse to legislation which encroaches on the "liberty" of would-be doctors who may not happen to qualify under his standard of professional attainments.

Before undertaking to high-hat Congress and the country in this matter, would it not be becoming in the medical profession to first make an effort to clean house. Our self appointed spokesmen should at least, bemoan the fact that a few should so far prostitute their privileges as to bring discredit and make necessary a restriction which reflects on the profession as a whole.

FREDERICK J. BOWEN, M.D.

Mount Morris, N. Y.

Health Costs

Upwards of one billion dollars annually is expended in this country for the maintenance of health, it was stated by the Public Health Service, November 30, in a review of expert opinions as to the cost of health and sickness in the United States.

Another Vaccination Vindication

It is interesting to observe that before the days of systematic vaccination in the Philippine Islands there were approximately 40,000 deaths per year from smallpox. As effectual vaccination was carried out the disease disappeared province by province.

The Physician's Library

Editorial Silence: The Third Era in Journalism. By Robert T. Morris, M.D. 256 pages, with one illustration. The Stratford Company, Boston, Mass., 1927.

The versatile Dr. Morris, surgeon, naturalist, sportsman and horticulturist, in this book enters the lists against the debauched and fetid journalism of our day. Pursuing the method which he made familiar to the profession when he distinguished First, Second, Third and Fourth Eras of Surgery, he now discusses with more than his accustomed vigor the Eras of Journalism. We are now in the Second Era, the characteristic feature of which is putridity, but which, happily, is to be succeeded, by a Third Era, in which human accomplishment is to be featured instead of human error; in which Lindberghs, and not lice will hold attention.

Dr. Morris's discussion of modern journalism re-emphasizes what the *Journal of Education* said about him some time ago: "To our thinking, no other American writes so many unusual things in such an unusual and attractive way as does Dr. Morris." Here is notable distinction.

Remember the *Journal of Education* says "so many unusual things." The man spawns new ideas with uncanny facility. Your Menckens and Lewises are dealing superficially and distordedly with the usual things of life—Congressmen, prohibitionists, fundamentalists, rotarians, shoes, ships, sealing wax, cabbages and kings; they are enormously clever and devastating; they exhilarate and amuse the near-intellectuals but always leave them with a sense of disappointment, anticlimax and mean exploitation after all—behind the brilliance is spiritual death. Dr. Morris takes one wittily into a constructive and limitless sphere of thought, in which is the vitality that is life.

It is true that Dr. Morris attacks Second Era Journalism with "Devastating" effects that out-Mencken Mencken and out-Lewis Lewis, but it is a Swiftian technic of which they are not capable and that aims at clean newspaper offices, not at the mere staging of a Roman holiday for intellectual snobs. In place of futility is force; in place of the sinister is sense and sincerity. Then Dr. Morris selects subjects worthy of a real thinker, not the peccadilloes of the Babbitts. And his is the soul of an artist, not of a craftsman.

The development of food supplies for the peoples of tomorrow as one of the subjects that a non-leprous press would feature in place of murder, arson and divorce is suggestively dealt with by Dr. Morris, and here again the Morrissonian ideas aforesaid fly about with electron-like facility.

Since Dr. Morris, as a pioneer, initiated gland-grafting some years ago, we have always associated him with the subject of rejuvenation. But his pen is more rejuvenescent than any scalpel can ever hope to be.

The Religion Called Behaviorism. By Louis Berman, M.D. pp. 153. Boni and Liveright, New York, 1927.

The author of *The Glands Regulating Personality* makes a formidable attack upon Watsonian Behaviorism in this very interesting little book. The human being, it would appear, is not quite so limited by his "conditioned reflexes" as Dr. Watson would have it, but lives—or ought to live—in vital relationship with his total environment. Berman plays the Gestalt theory of Kohler against the teachings of Watson with telling effect, and makes out a good case for the soul and the mind as well as the body. Only the last exists for the Behaviorist.

Berman insists that what he has taught concerning the glandular and chemical phenomena of the human organism still holds good but in no wise commits him to what he derisively calls Watsonianity, with which he has been crudely supposed to be aligned.

The term religion is used merely in the sense of a self-conscious attitude toward life. The Behavioristic attitude the author feels to be unsatisfying and inadequate as a means of rationalizing the everyday problems of personal disturbances and adjustments. Berman refuses to see ourselves as "jack-in-the-box automata, the marionettes of reflexes," which view seems to him hopeless as the basis of a spiritual and creative way of life, which is just as much a reality as is the gamut run by biologic materialism of the stark, Watsonian brand. Behaviorism would have it that we are wholly the victims of conditions beyond our control from the moment of birth to the moment of extinction, with habit merely begetting habit and a chain of cause and effect forcing us now along that one-way street, now along this, entangled in a net of reflexes to struggle against which is vain delusion. We are not, declares Berman, solely the degraded products of muscle twitchings and gland ooings. What becomes of initiative, discovery, invention, art and emergent evolution in such a case?

Life is a process of inexhaustible and unpredictable individuation, and the postulates of the Behaviorists can never account for the commonest man, much less a Shakespeare or a Newton; they imply a solely mechanical viewpoint in biology with merely pretentious finalities.

In Berman's eyes Behaviorism would seem to rationalize little more than suicide.

Tiger Trails in Southern Asia. By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.). Professor of Dermatology, University of Kansas, etc., pp. 207; 115 illustrations. The C. V. Mosby Company, St. Louis, Mo., 1926.

Here we have the story of a hunt for tiger, elephant and deer in French Indo-China, unique among hunting tales because of its strict adherence to the truth. The account begins at Yokohama and traces the experiences of the party in reaching French Indo-China where the big game was said to abound. They pressed inland, fought the countless insect pests, saw many marvelous ruins, and finally reached the jungles where tiger and elephant roamed. Romance leaves the story at this point, for the author found the tiger the most wary of beasts, baited with the greatest difficulty, and never inclined to attack the hunter. Wild elephants also were noted for their shyness, and were shot while on the run rather than in the usual "death-defying charge." All these events have been truthfully described by Dr. Sutton, who frankly intends this book to be a guide for prospective big game hunters, rather than a work of fiction. The average reader who clings to his old ideas regarding savage beasts will refuse to believe these hunting tales. The book closes with explicit advice on the subject of passports, routes, guns, ammunition, and equipment.—L. G. B.

Management of the Sick Infant. By Langley Porter, B.S., M.D., M.R.C.S. (Eng.), L.R.C.P. (Lond.), Professor of Clinical Pediatrics, University of California Medical School, etc., and William P. Carter, M.D., Instructor in Pediatrics, University of California Medical School. Third revised edition. pp. 726, with index; 72 illustrations. The C. V. Mosby Company, St. Louis, Mo., 1927.

Neither time nor space are wasted by the authors of this book in dealing with the problems of infancy which they have undertaken to discuss. Symptoms are first considered, and the etiology and treatment of each expounded as briefly as possible. Concise statements afford the necessary information, while heavy type draws attention to the important sub-headings. The second part gives the diagnosis, pathology, and treatment of every conceivable disease of infancy, in the same direct, positive style of writing. The third section gives methods of diagnosis, treatment, feeding and preparation of drugs and formulae in a most exact and detailed manner. The authors hold strictly to their purpose of presenting us with an intensely practical book, which summarizes the best in present-day knowledge of this subject. Medical students particularly will find this an excellent book for reference.—L. G. B.

Mineral Waters of the United States and American Spas.

By William E. Fitch, M.D., Member of the International Society of Medical Hydrology, Associate Gynecologist, O.P.D., Presbyterian Hospital; Attending Physician, Vanderbilt Clinic, College of Physicians and Surgeons, etc. Illustrated; pp. 779. Lea and Febiger, Philadelphia and New York, 1927.

Hydrotherapy and mineral-water therapy have been attacked from many angles, and are either frowned upon or ignored by the majority of medical schools of to-day. Fitch appreciates this fact, and has attempted to defend his subject in a manner that shows no lack of effort. Whether he has succeeded or not is a matter of personal opinion, for there are many who will not agree with his theories of the therapeutic action of certain chemicals, even after the question of their method of administration has been settled. The last three-quarters of the book describes the attractions and specific advantages (including the spring analyses) of every known spring and spa in the country. The inclusion of some two hundred and forty that were found to have long since passed out of existence lengthens the book unnecessarily.—L. G. B.

Medical Science for Everyday Use. By Shields Warren, A.B., M.D., Instructor in Pathology in the Harvard Medical School; Pathologist Palmer Memorial Hospital, Boston, Massachusetts; pp. 178, including index. Lea and Febiger, Philadelphia, 1927.

The articles which make up this book originally appeared in the Boston *Sunday Herald*. They represent a very successful attempt to present in everyday speech many advances and accomplishments of medical science. The subjects dealt with are such as the lay reader would be likely to be most interested in and upon which he needs exactly the kind of enlightenment that the author skillfully provides. Heywood